HANTAREX

LARGE SCREEN MONITOR

SERVICE MANUAL

ELECTRONIC EQUIPMENT MANUFACTURER

MONITOR	*CHASSIS FAMILY*	*INPUT CONNECTOR*	*ANALOG CONTROL*	*CHROMA MODULE*	*X.R. PROT. CIRCUIT*	*DEGAUS. R. CONTR.*
CT 9000/P SR 21"-25"-28"	66002900	66003367	66003369 66003368	66003040	—	—
CT 9000/E SR 21"-25"-28"	66002900	66003367	66003369 66003368	66003040	—	—
CT 9000/P SR 32"-33"	66002907	66003385		66003040	—	—
CT 9000/P SR 37"	66002907	66003385		66003040	—	—
MTC 9000/P SR 21"-25"-28"	66002904	66003385		66003040	—	—
MTC 9000/P SR 32"-33"	66002907	66003385		66003040	—	—
MTC 9000/P SR 37"	66002907	66003385		66003040	—	—
MTC 9000/E SR 21"-25"-28"	66002906	66003383		66003040	—	—
MTC 9000/M SR 28" FULL SQUARE FLAT SQUARE	66002905 66002902	66003383		66003040	—	—
MTC 9000/M SR 28 USA	66002901	66003383		66003047	66003384	—
MTC 9000/P SR 21-25-28 U.K. MTC 9000/M SR 28 U.K.	66002904	66003379	66003381	66003040	—	—
MTC 9000/M SR 28 T	66002903	66003377	66003376	66003047	—	66003375
MTC 9000/SR NTSC	66002901	66003358	66003359	66003045 66003370	66003384	—

SCHEDA TECNICA - *Technical specification*

Tensione di alimentazione:
Mains
220 V ± 15% - 50 Hz

Consumo energia: (Cenelec HD406)
Consumption
80 W (95 W x 32"; 37")

Sicurezza:
Safety
doppio isolamento da rete rispondente alle norme di sicurezza TEC 65.
According to SAFETY rules IEC 65

Fusibile:
Fuse
2,5 A T

Controllo automatico del punto di lavoro del cinescopio
Automatic control of CRT dark level

Standard di ricezione:
Standard
PAL (PAL/SECAM o NTSC a richiesta)
PAL (PAL/SECAM or NTSC as well upon request)

Cinescopio:
CRT
21"-25"-28" Full Square 110 Black Matrix high contrast
28"-32"-37" Flat Square (Black Matrix for 32"-37")

Larghezza del pitch orizzontale:
Width horizontal pitch
0.82 mm. (21"-25"-28"), 1 mm (37")

Larghezza del pitch verticale:
Width vertical pitch
0.83 mm.

Limitazione della corrente media di fascio: 1 mA
Beam current limiter
(1,5 mA x 32"-37")

Bassa frequenza audio:
L.F. audio
16 W musicali su 8 OHM
16 W (music power) on 8 OHM

Caratteristiche Video
Video specification

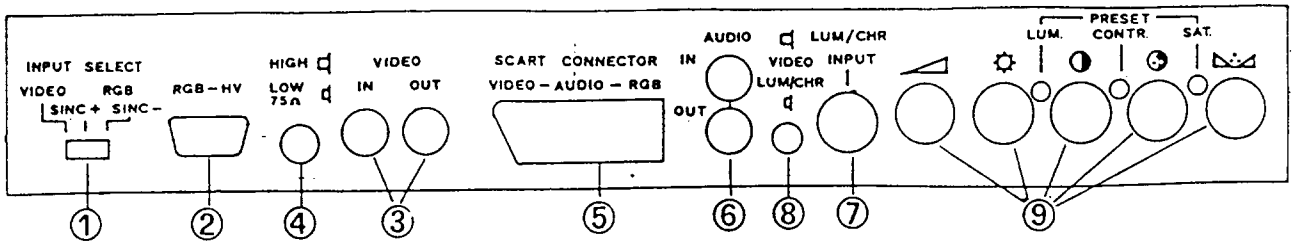
Larghezza di banda in video composito:
Video composite band width
4 MHz ± 3 dB

R G B:
RGB band width
5 MHz ± 3 dB

Tempo di blanking orizzontale:
Horizontal blanking time
11,4 uS

Tempo di blanking verticale:
Vertical blanking time
1,2 mS

PIASTRA POSTERIORE INGRESSI/USCITE - Input/Output rear connections 66003383

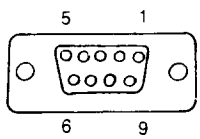


(1) **COMMUTATORE D'INGRESSO:** seleziona i segnali in ingresso: Video composito delle prese (3) e (5) e RGB dalle prese (2) e (5) con possibilità di sincronismo positivo o negativo inviato ai Pin 10-12 della presa (5).
Segnale Video = 1 Vpp ± 3 dB Segnali RGB = 1 V ± 3 dB

INPUT SWITCH: *selects the following signals:*
Composite Video from (3) and (5), RGB signals from (2) and (5) with positive or negative sync. selection to pins 10-12 of (5)
Video signal = 1 Vpp ± 3 dB RGB signals = 1 V ± 3 dB

(2) **CONNETTORE INGRESSI RGB TTL E SINCRONISMI SEPARATI:** ingressi RGB TTL e sincronismi verticali ed orizzontali separati su presa Cannon D9 subminiatura.

RGB AND SEPARATED SYNC. INPUT: *RGB TTL input and separated vertical and horizontal sync. to Cannon D9 connector.*



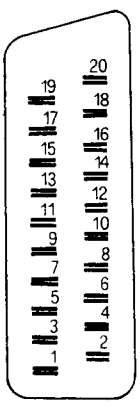
1	massa	(*Ground*)
2-6-7	n.c.	(*not connections*)
3	ingresso B	(*input B*)
4	ingresso G	(*input G*)
5	ingresso R	(*input R*)
8	sincronismo orizz.	(*horizontal sync.*)
9	sincronismo vert.	(*vertical sync.*)

(3) **INGRESSO VIDEO CON COLLEGAMENTO IN USCITA "LOOPED THROUGH":** connessione a BNC che permette il collegamento in cascata con altri monitor disinserendo mediante il commutatore (4) la resistenza di terminazione a 75 OHM.
Segnale Video = 1 V ± 3 dB

VIDEO INPUT LOOPED THROUGH SYSTEM: *BNC connection that allows the possibility (i. e. loop through) to further monitors, by releasing terminal 75 OHM resistence thru switch (4).*
Video signal = 1 V ± 3 dB

(4) **EUROCONNETTORE SCART:** connettore normalizzato d'ingresso e uscita audio/video

PERITELEVISION CONNECTOR: *input/output normalized audio/video connector.*



Pin 1	Uscita audio (*audio output*)	0,5 Vrms
Pin 2	Ingresso audio (*audio input*)	0,5 Vrms
Pin 3	n.c.	0,5 Vrms
Pin 4	Collegamento di massa audio (*audio ground*)	
Pin 5	Collegamento di massa audio (*audio ground*)	
Pin 6	n.c.	
Pin 7	Ingresso B (*input B*)	1 Vpp/75 OHM
Pin 8	n.c.	
Pin 9	Collegamento di massa ingresso V (*Ground input G*)	
Pin 10	Ingresso sincro verticale (*Vertical sync. input*)	
Pin 11	Ingresso V (*input G*)	1 Vpp/75 OHM
Pin 12	Ingresso sincro orizzontale (*Horiz. Sync. input*)	
Pin 13	Collegamento di massa ingresso R (*Ground input R*)	
Pin 14	Uscita 12V - n.c.	
Pin 15	Ingresso R (*input R*)	1 Vpp/75 OHM
Pin 16	Ingresso (*fast blanking*) (*input*)	3V

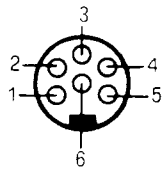
Pin 17 Collegamento di massa CVBS - *Ground*
Pin 18 Collegamento di massa fast blanking - *fast blanking common*
Pin 19 Uscita CVBS (*output*) 1 Vpp/75 OHM
Pin 20 Ingresso CVBS (*input*) 1 Vpp/75 OHM
Pin 21 Piedino schermato (*shelded pin*)

(5) **INGRESSO/USCITA AUDIO:** connessione a Pin-Jack per un ingresso ed una uscita audio. V audio I/0 = 0,5 Vrms

AUDIO INPUT/OUTPUT - *Pin-Jack connection. V Audio I/0 = 0,5 Vrms*

(6) **CONNETTORE D'INGRESSO LUMA-CROMA e AUDIO:** connessione DIN che permette l'ingresso di segnali di luminanza e crominanza separati e audio selezionati mediante il commutatore (B).

AUDIO LUM/CHROM INPUT CONNECTOR: *DIN connector allows the input of separate luminance and chrominance signals selected by (B) switch.*

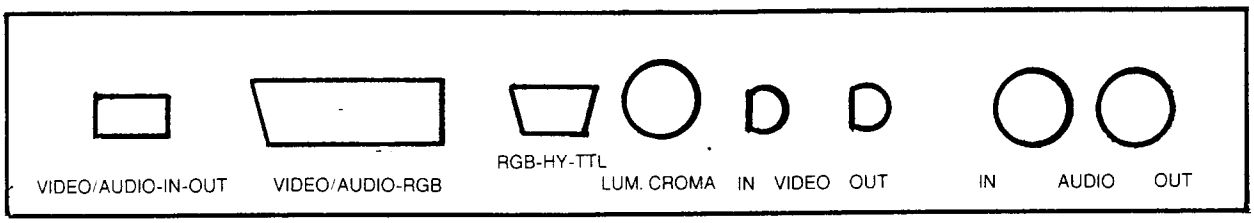


1-2 segnale di luminanza (luminance signal)
3 massa (ground)
4 audio
5 terminazione a 75 OHM da collegare al pin 1 e 2 (75 OHM termination)
6 segnale di crominanza (chrominance signal)

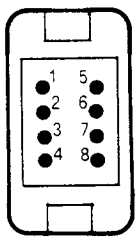
(7) **COMANDI MANUALI DEI LIVELLI ANALOGICI:** potenziometri per la regolazione di volume, luminosità, contrasto, colore, tinta con regolazione di preset per luminosità, contrasto e colore.

ANALOG LEVELS REGULATION: *potentiometers for the brightness, saturation and contrast regulation with preset regulation of brightness, saturation, and contrast.*

PIASTRA POSTERIORE INGRESSI/USCITE 66003367
INPUT/OUTPUT REAR CONNECTIONS 66003367

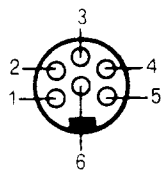


CONNECTOR EIA - 8 PINS



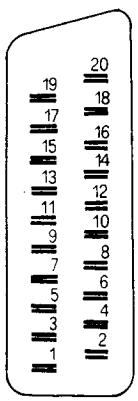
1 Uscita audio	*Audio output*
2 Ingresso video	*Video input*
3 Massa	*Common*
4 Uscita video	*Video output*
5 Massa audio	*Audio Common*
6 Massa	*Common*
7 Massa	*Common*
8 Ingresso audio	*Audio input*

CONNECTOR LUMA - CHROMA



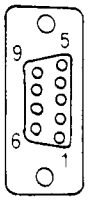
1 Video luminanza	*Luminance*
2 Video luminanza	*Luminance*
3 Collegamento di massa	*Common*
4 Audio	*Audio*
5 Per chiusura a 75 Ohm connettere al piedino n. 1	*To be connected to pin 1 for 75 Ohm video input termination*
6 Croma	*Chroma*

CONNECTOR SCART



0,5 Vrms	**1** Uscita audio	*Audio output*
0,5 Vrms	**2** Ingresso audio	*Audio input*
0,5 Vrms	**3** Uscita audio	*Audio output*
	4 Collegamento di massa (audio)	*Audio common*
	5 Collegamento di massa (ingresso B)	*Blue common*
0,5 Vrms	**6** Ingresso audio	*Audio input*
1 Vppl/75 Ohm	**7** Ingresso B	*Blue input*
	8	
	9 Collegamento di massa (ingresso V)	*Green common*
	10 Ingresso sincro, verticale	*Vert. sync. input*
1 Vppl/75 Ohm	**11** Ingresso V	*Green input*
	12 Ingresso sincro orizzontale	*Hor. sync. input*
	13 Collegamento di massa (ingresso R)	*Red common*
	14 n.c.	*12V output*
1 Vppl/75 Ohm	**15** Ingresso R	*Red input*
3V	**16** Ingresso fast blanking	*Fast blanking input*
	17 Collegamento di massa (CVBS)	*Video common*
	18 Collegamento di massa fast blanking	*Fast blanking common*
	19 Uscita CVBS	*Video output*
1 Vppl/75 Ohm	**20** Ingresso CVBS	*Video input*
1 Vppl/75 Ohm	**21** Piedino schermato	*Shield*

CONNECTOR RGBI - TTL



1 Massa	*Common*
2	
3 Ingresso B	*Blue*
4 Ingresso V	*Green*
5 Ingresso R	*Red*
6 Intensificatore	*Intensifier*
7	
8 Sinc. orizzontale	*Hor. sync.*
9 Sinc. verticale	*Vert. sync.*

ELENCO RICAMBI/SPARE PARTS LIST

Transistor:	**N. Codice/*Part No.***
BC 237 B/BC 547	2040.0422
BC 307/BC 557 B	2040.0403
BC 327	2040.0440
BC 368	2040.0450
BF 422	2040.0210
BF 423	2042.0150
BF 459 = BF 871	2042.0500
BD 137	2041.0200
BD 682	2041.0210
BU 508A = BU 536	2043.0320

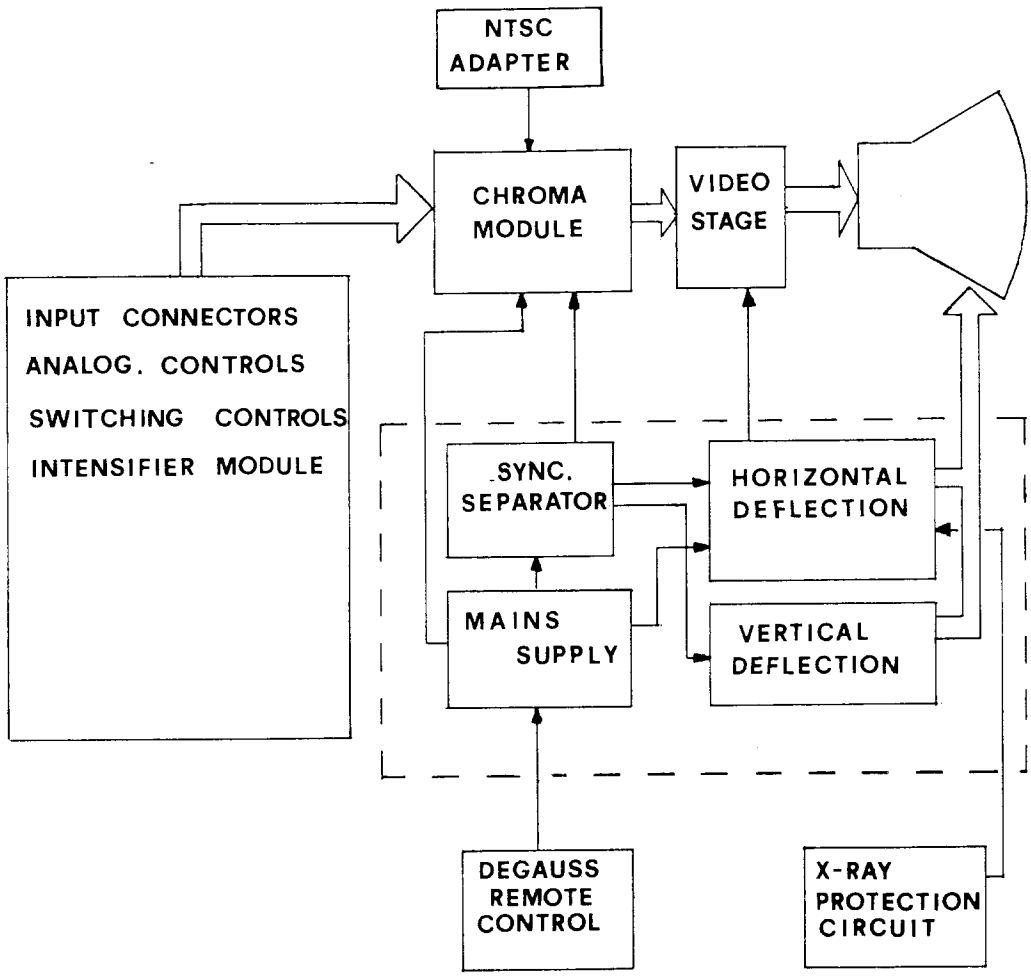
Circuiti integrati (*Integrated Circuit*)	**N. Codice/part No.**
L7805	2062.0070
LM 317T	2067.1080
T 74 LS 04	2062.0470
T 74 LS 06	2067.0070
T 74 LS 22	2067.1170
TBA 120T	2063.0021
TDA 2594	2067.0940
TDA 2030	2062.0360
TDA 3562 A	2062.0550
TDA 3590 A	2067.0970

Diodi/*Diodes*	**N. Codice/*Part No.***
BA 157	2010.0020
BA 158	2010.0030
BA 159	2010.0010
BY 133	2015.0450
BY 228	2015.0210
BY 229	2015.0400
BYV 95 C	2015.0170
IN 4001	2015.0002
IN 4004	2015.0004
IN 4007	2015.0007
IN 4148	2010.0000

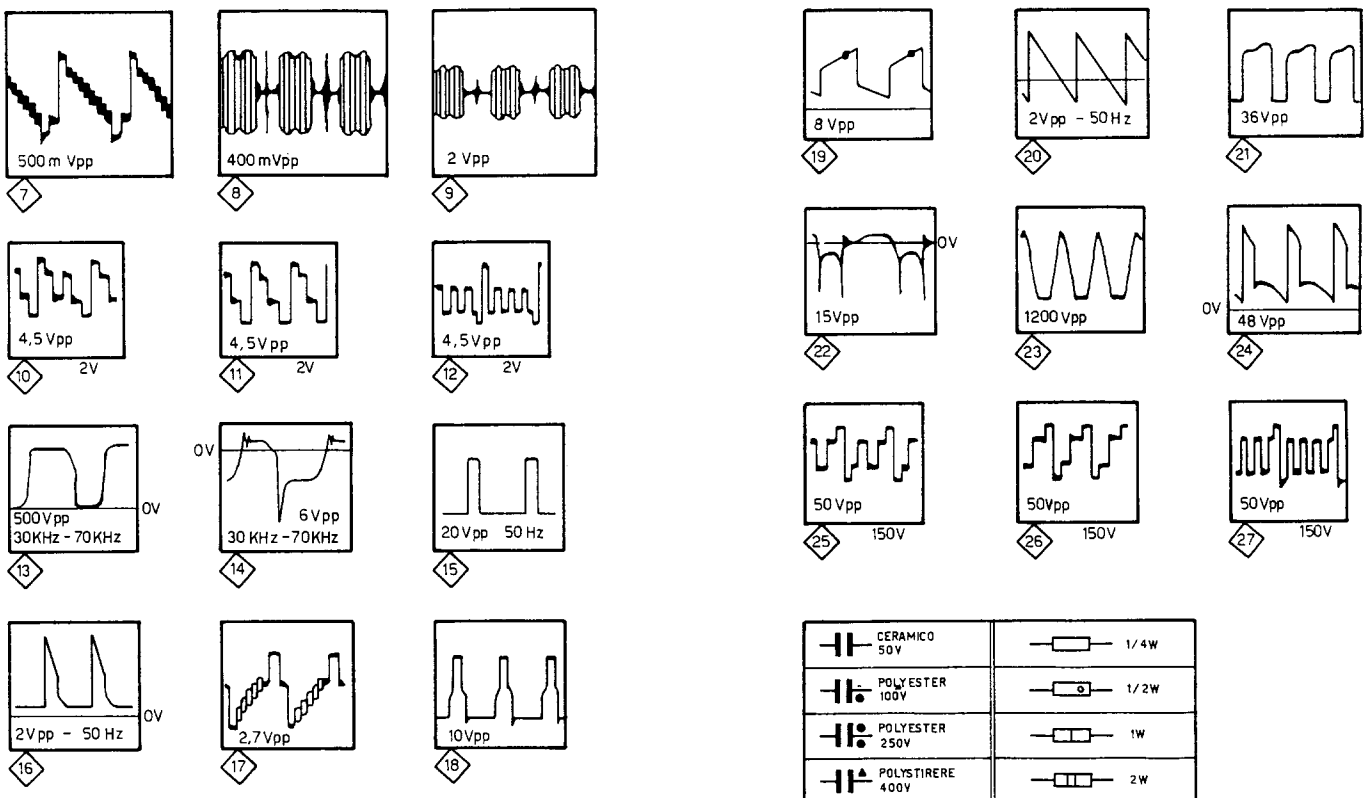
Diodi Zener/*Zener Diodes*	**N. Codice/*Part No.***
C 7 V 5	2011.0570
C 27 V	2011.0580
3 V 6	2011.0030

Trasformatori	***Transformers***	**COD.**
Trasfor. Alim. S.M.P.S.	*SMPS Mains transformer*	2802.4660
Trasfor. EHT	*Diode Split EHT Transformer*	2802.4730
Trasfor. pilota	*Driver transformer*	2802.4700
Filtro rete U2	*Mains Filter U2*	3104.4700
PTC	*PTC Resistor*	2100.0140
Quarzo 8,86 MHz	*8,86 MHz crystal*	2970.0080
Bobine smagnetizzazione	*Degaussing coils*	
21"		2806.0260
25"		2806.0270
28"		2806.0230
Coils		
Linea ritardo Y	*Y Delay*	2970.0050
Bobina E-O	*E-W Coil*	2802.0870
Bobina linearita	*Linearity Coil*	2802.0830
Interruttore rete	*Mains switch*	6602.0003
Zoccolo cinescopio	*CRT Socket*	3402.0270

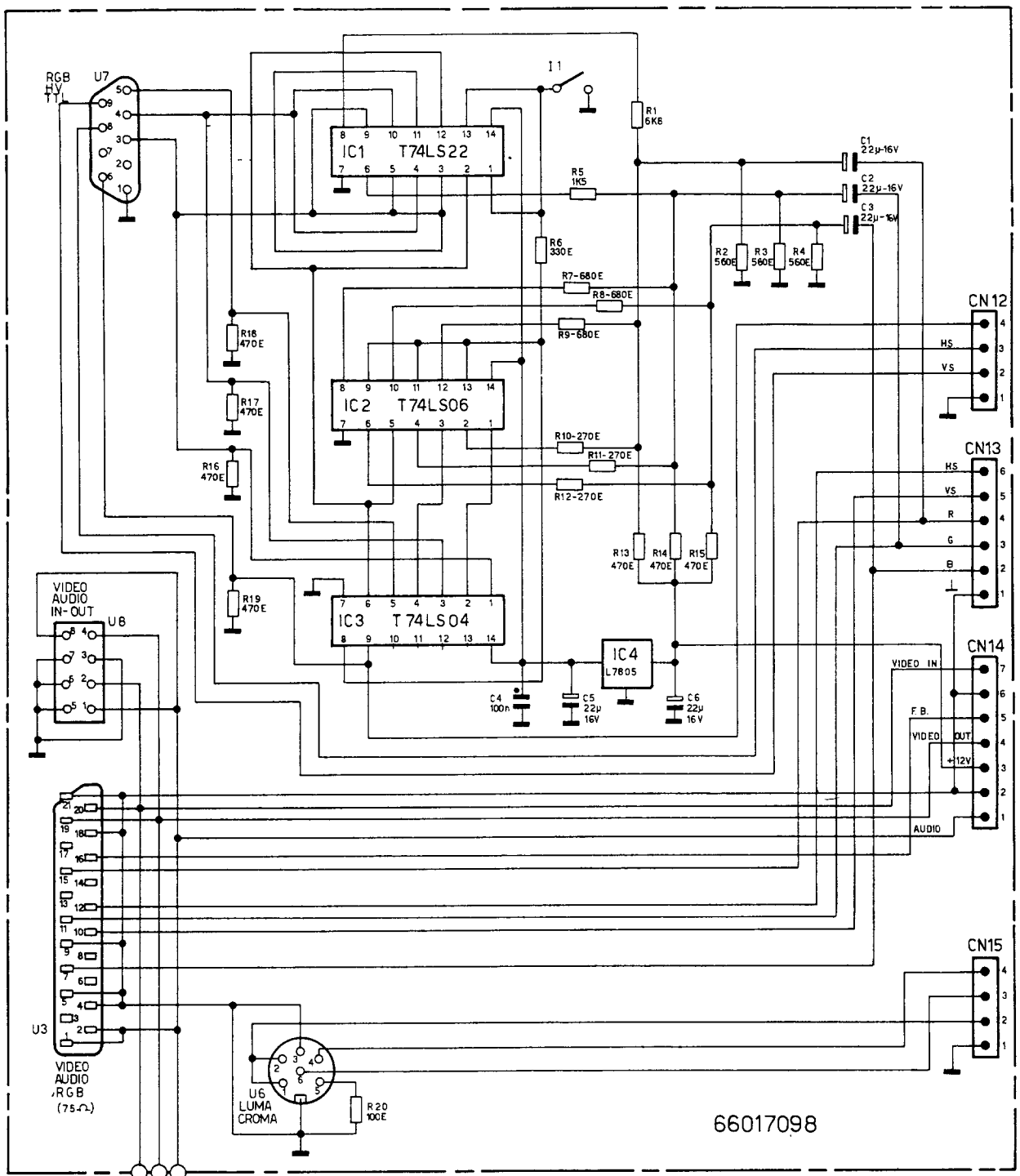
SCHEMA A BLOCCHI/*BLOCK DIAGRAM*



FORME D'ONDA/*WAVE FORM*



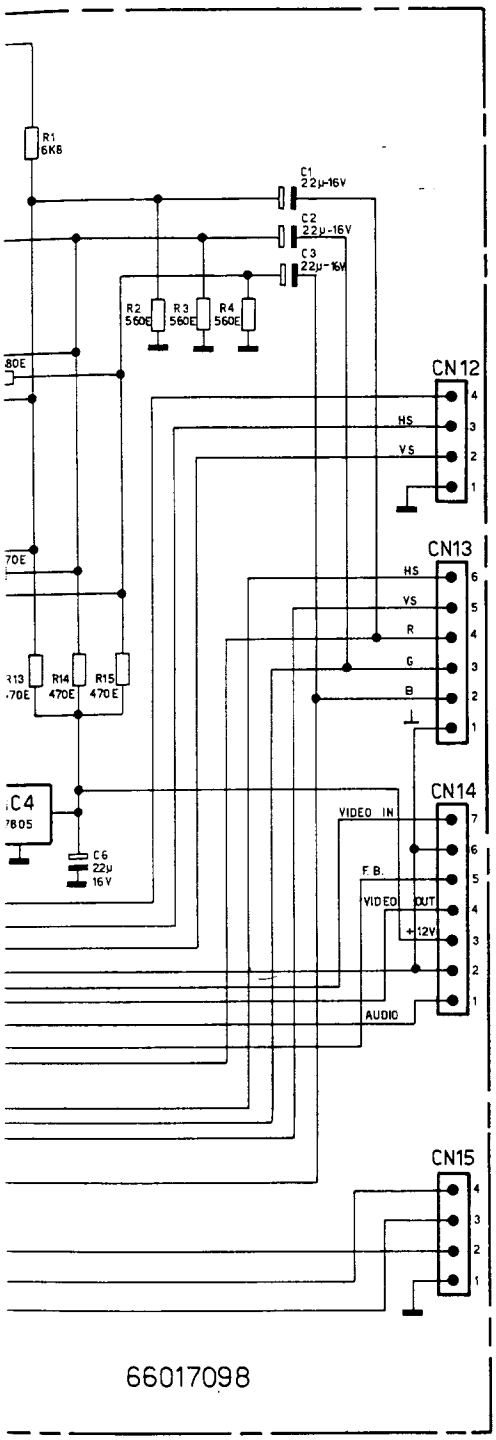
INPUT CONNECTORS + INTENSIFIER 66003367



MOD. CT 9000/P SR 21" - 25" - 28"

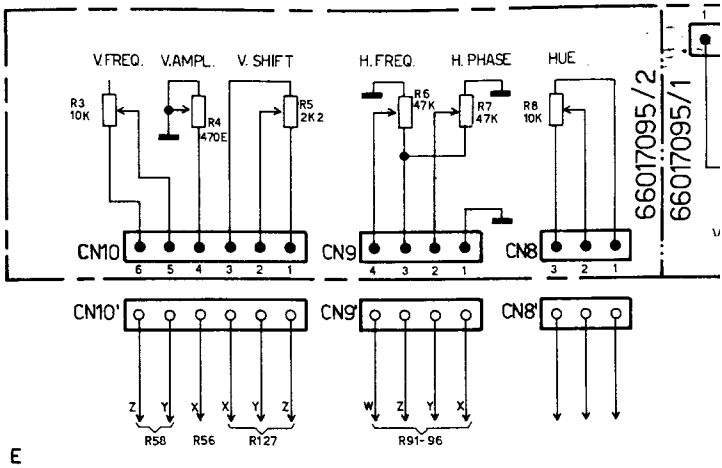
CH. FAM. 66002900

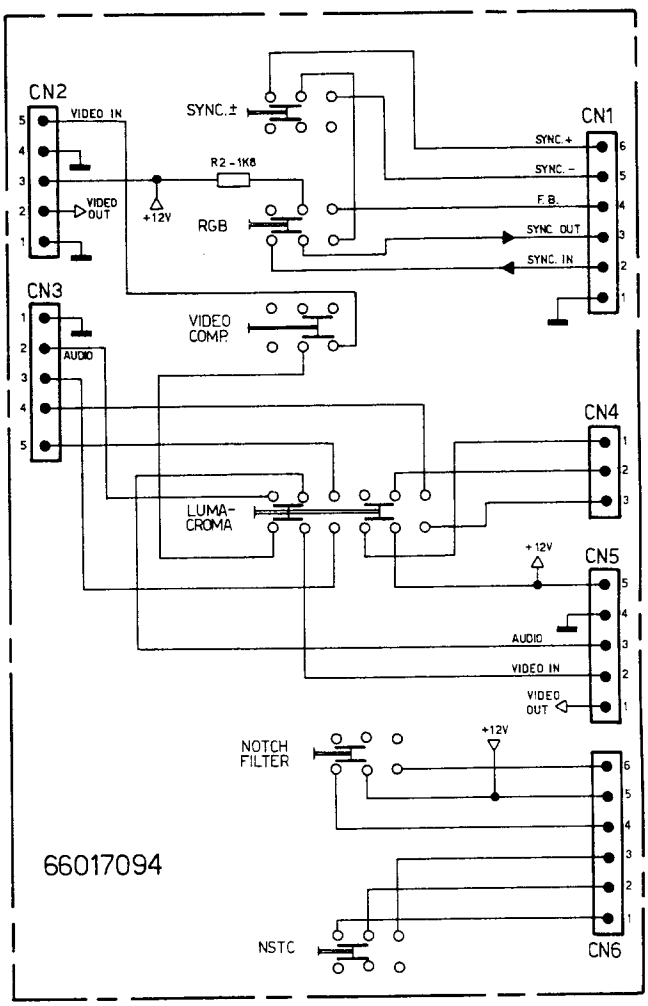
ITENSIFIER 66003367



66017098

ANALOG CONTROL 66003368





66017094

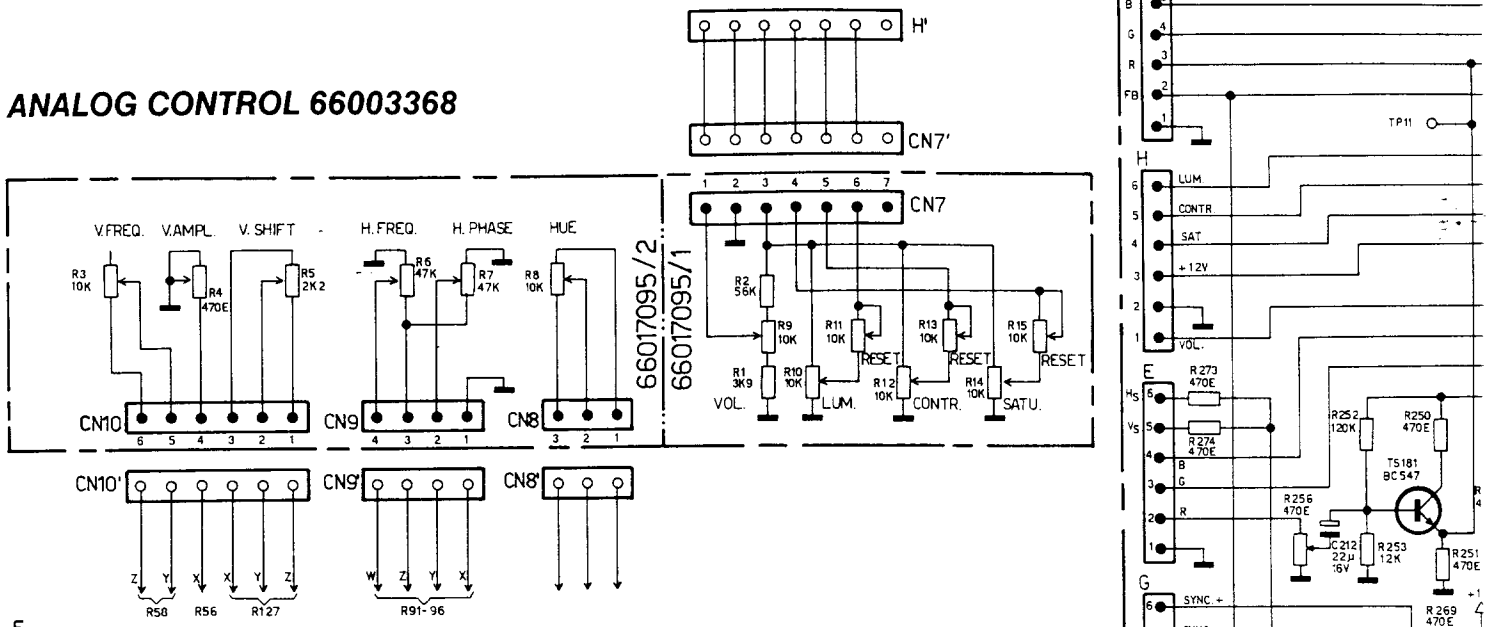
SWITCHING MODULE 66003369

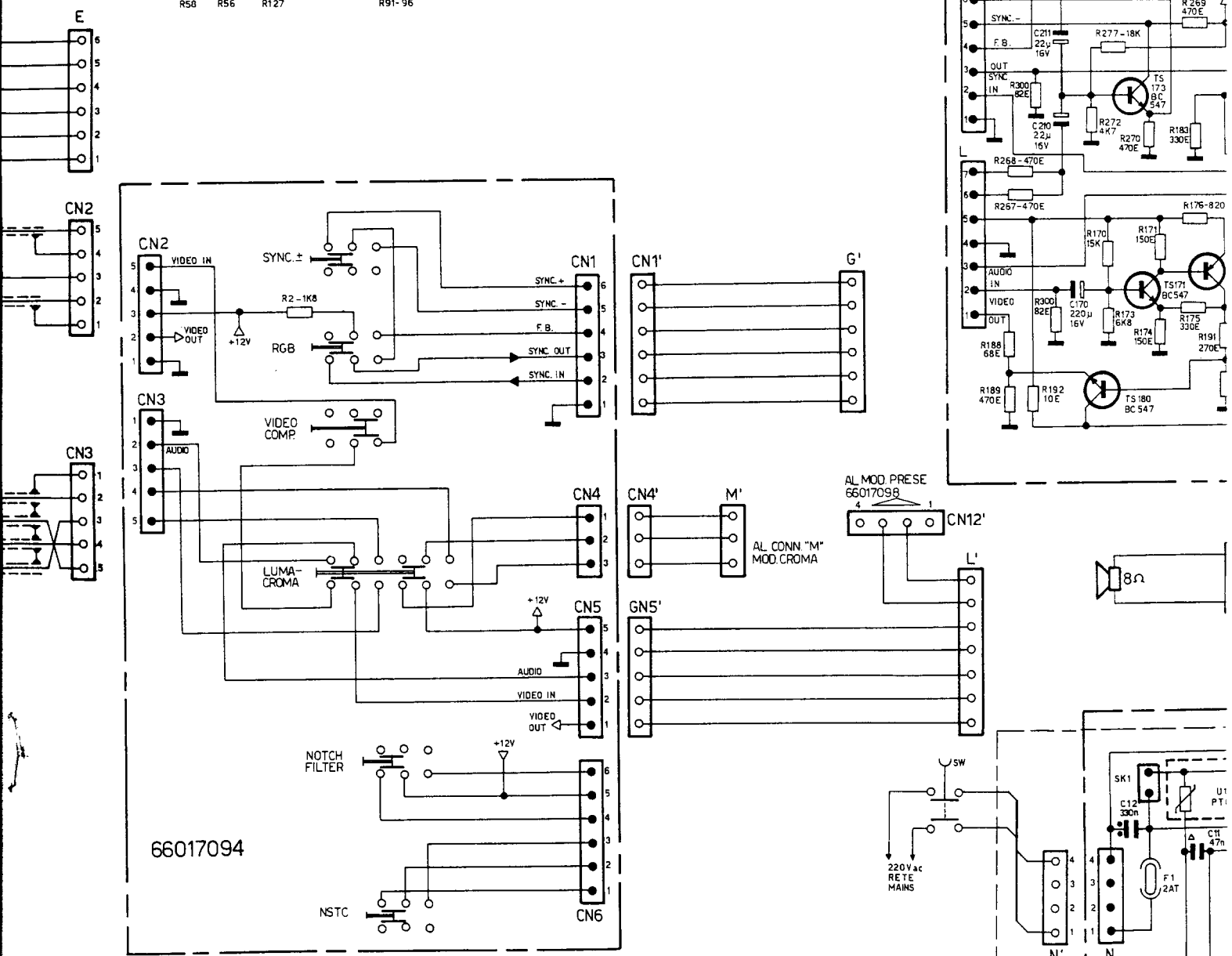
HANTAREX

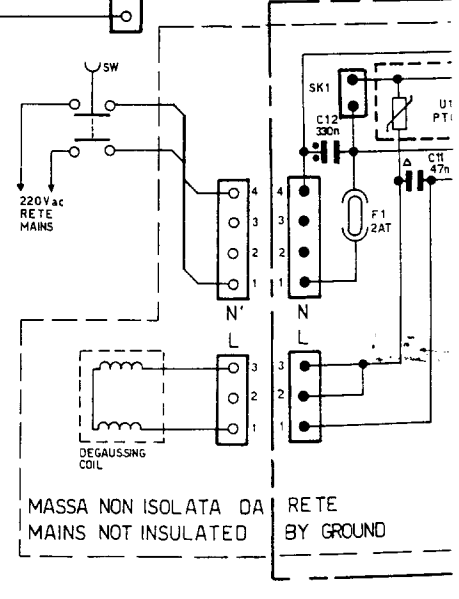
MOD. CT 9000/P SR 21'' - 25'' - 28''

CH. FAM. 66002900

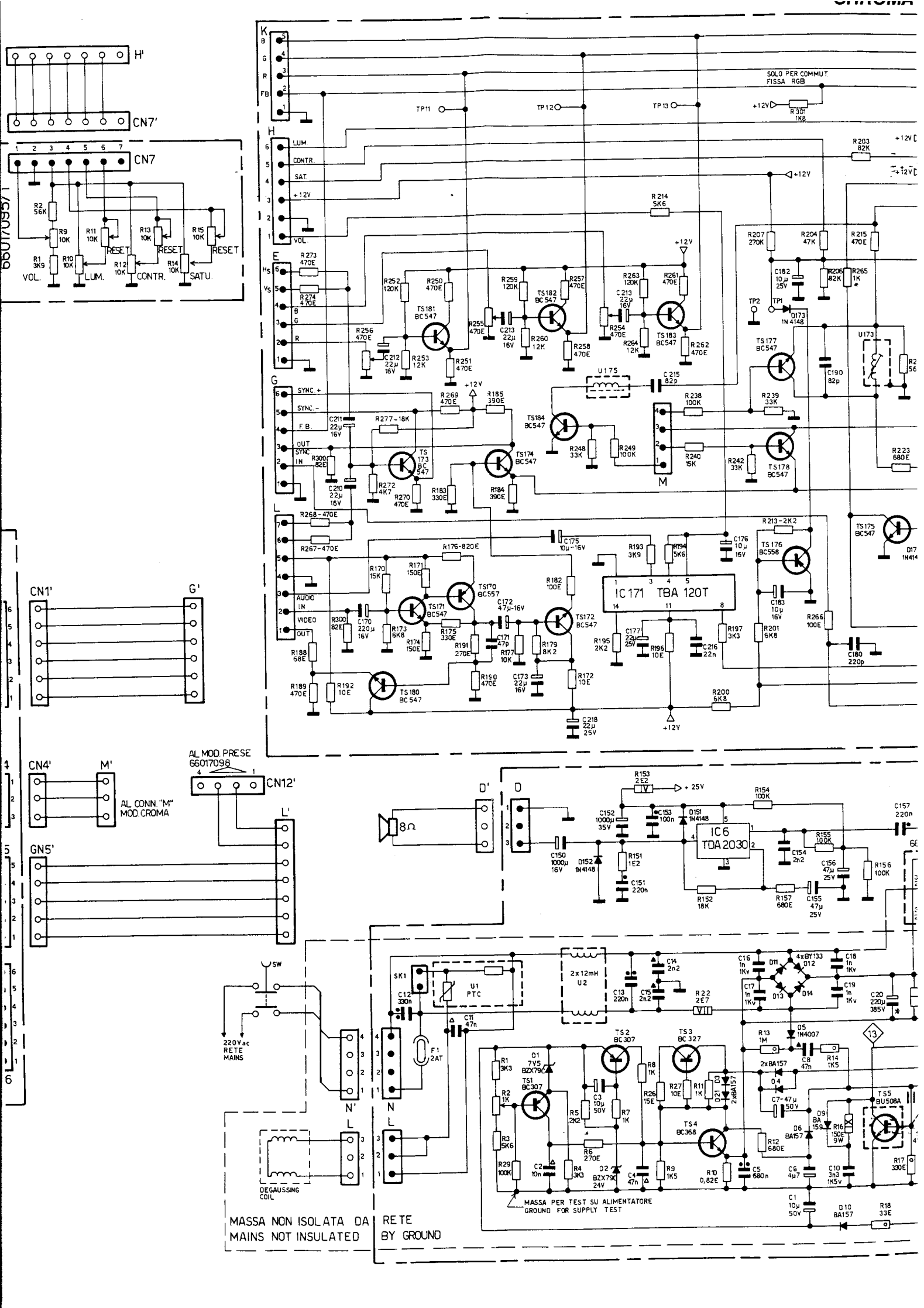
ANALOG CONTROL 66003368

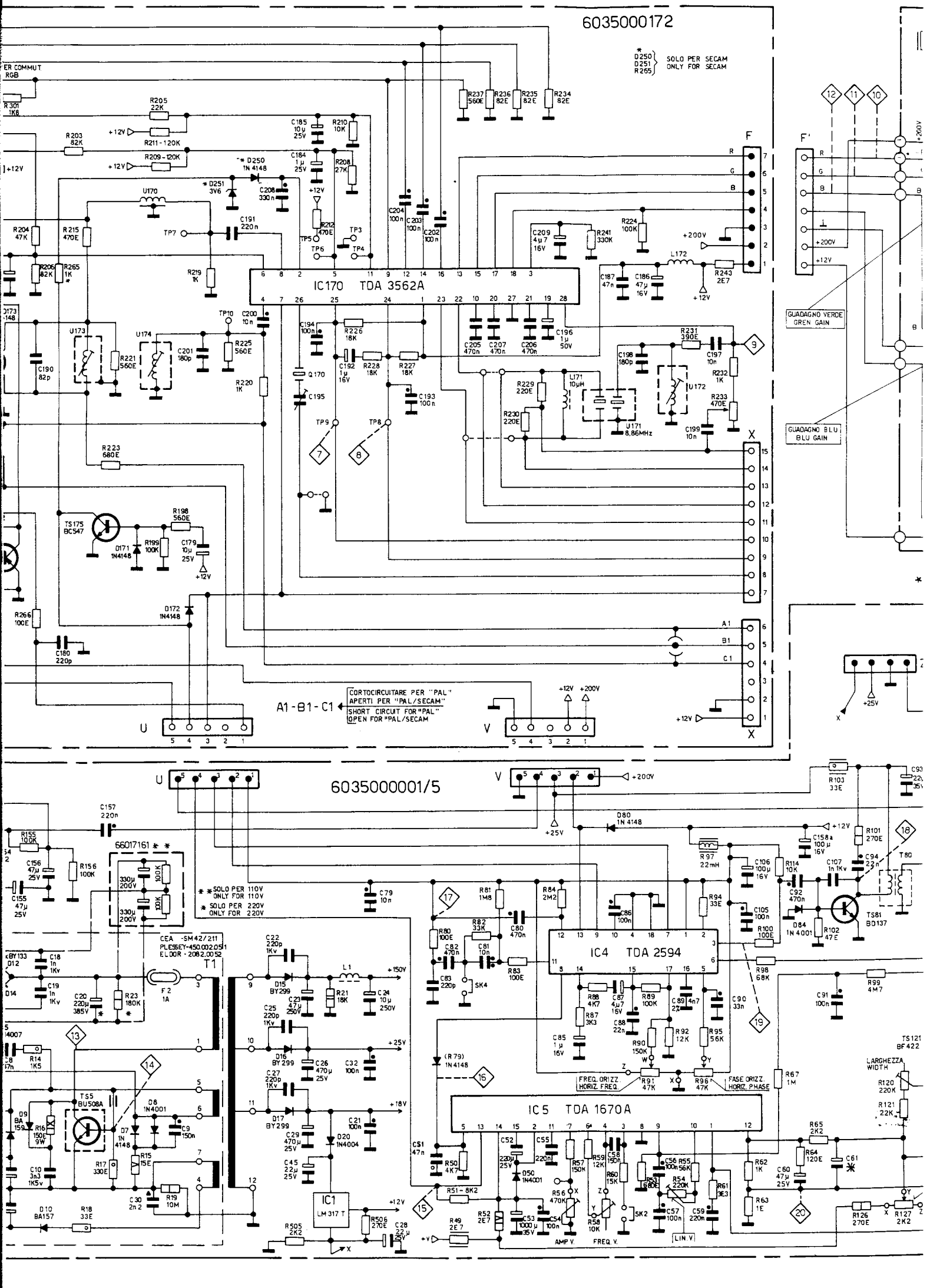




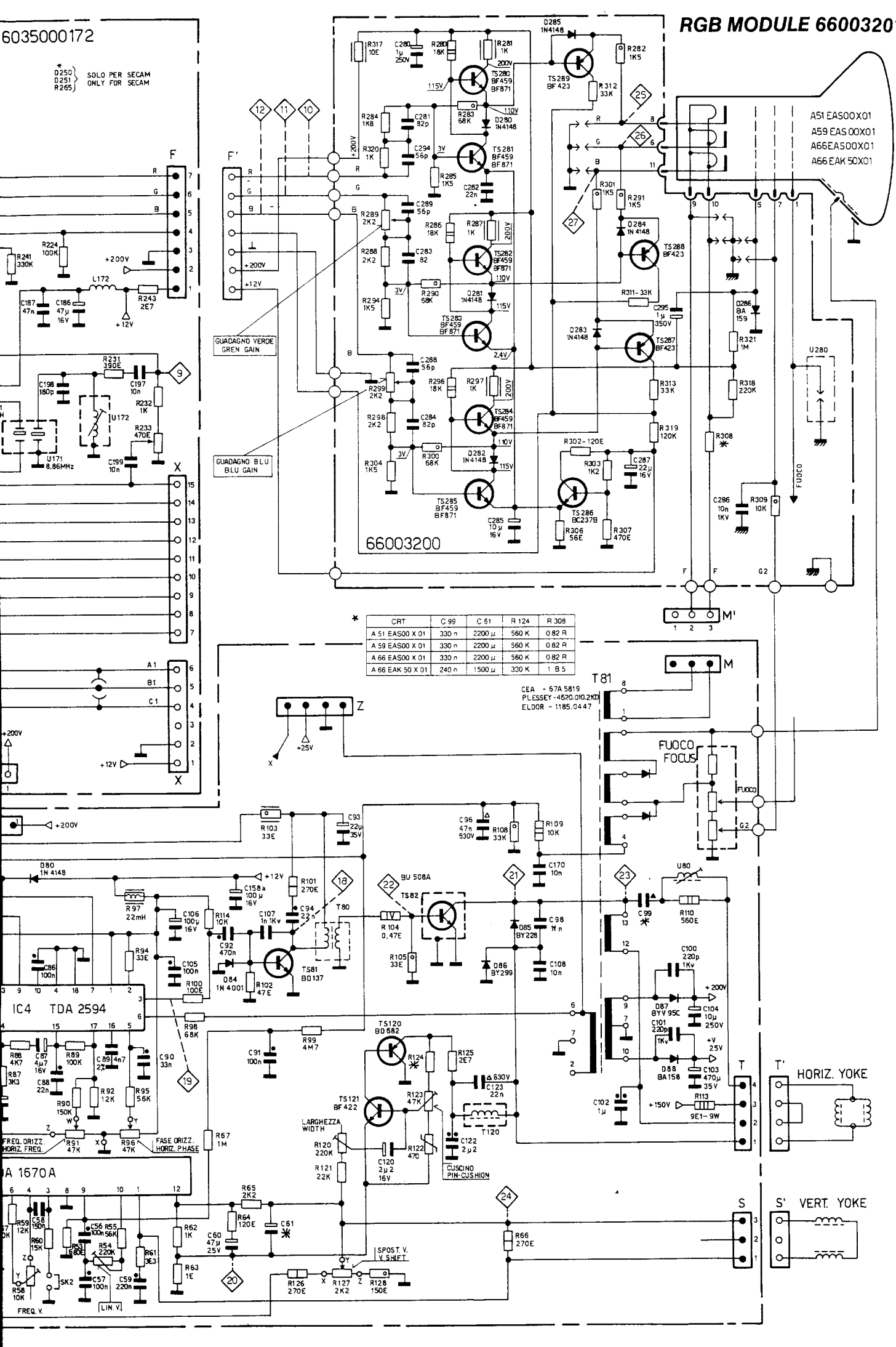


SWITCHING MODULE 66003369

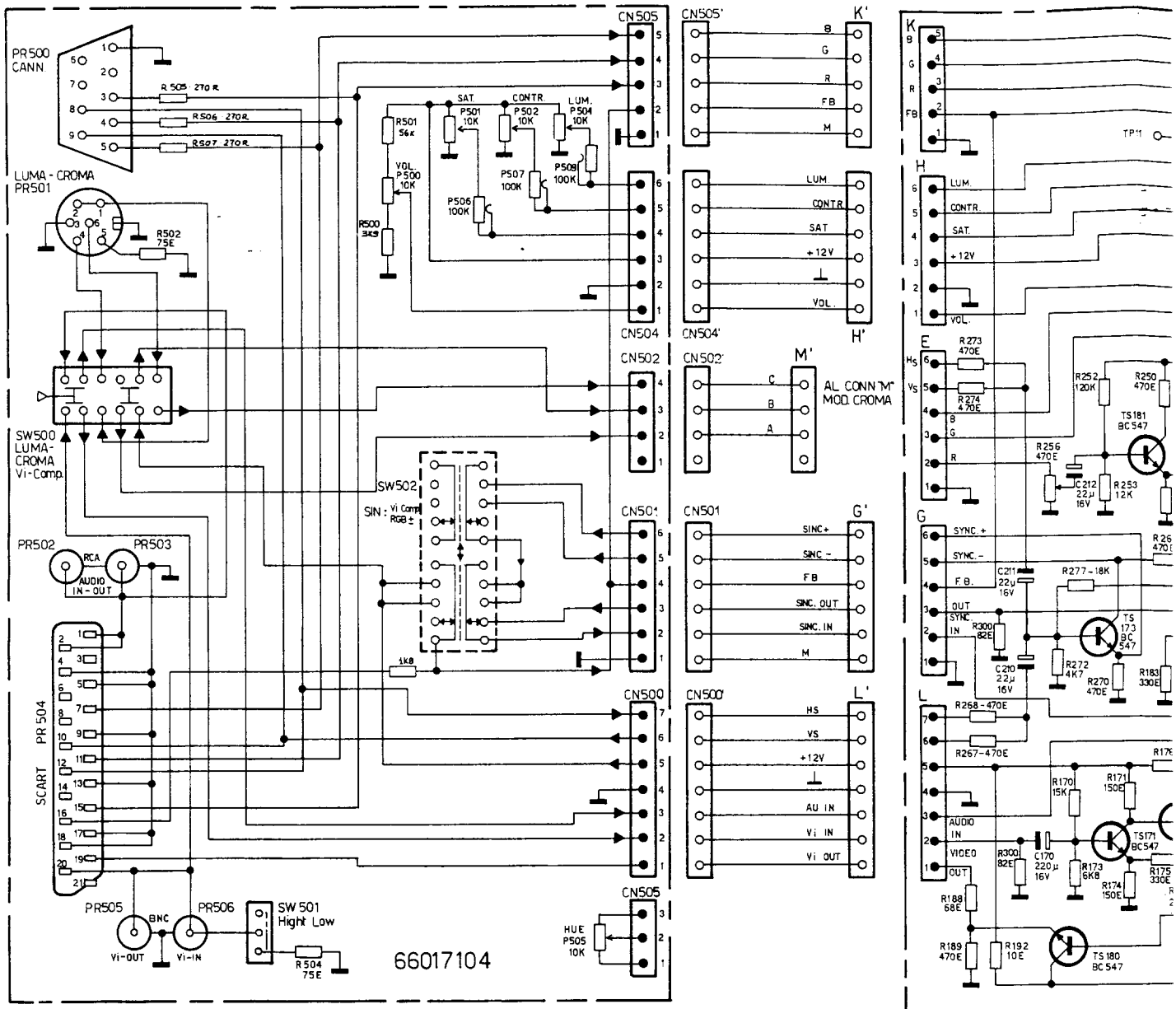

H'
CN7'
CN7
R2 56K
R9 10K
R11 10K
R13 10K
R15 10K
R1 3K9
R10 10K
R12 10K
R14 10K
RESET
VOL.
LUM.
CONTR.
SATU.
66017095/1
K
H
E
G
L
M
LUM.
CONTR.
SAT.
+12V
VOL.
SYNC. +
SYNC. -
F.B.
OUT SYNC
IN
AUDIO IN
VIDEO OUT
SOLO PER COMMUT FISSA RGB
TP11
TP12
TP13
R301 1K8
R203 82K
R214 5K6
R207 270K
R204 47K
R215 470E
C182 10µ 25V
R206 82K
R265 1K
TP2
TP1
D173 1N4148
U173
TS177 BC547
C190 82p
R273 470E
R274 470E
R252 120K
R250 470E
R259 120K
TS182 BC547
R257 470E
R263 120K
R261 470E
C213 22µ 16V
R254 470E
R264 12K
TS183 BC547
R262 470E
TS181 BC547
R256 470E
R255 470E
R260 12K
R258 470E
C212 22µ 16V
R253 12K
R251 470E
U175
C215 82p
R269 470E
R185 390E
C211 22µ 16V
R277-18K
TS184 BC547
R238 100K
R239 33K
R248 33K
R249 100K
R240 15K
R242 33K
TS178 BC547
R223 680E
R300 82E
C210 22µ 16V
TS 173 BC 547
TS174 BC547
R272 4K7
R270 470E
R183 330E
R184 390E
R268-470E
R267-470E
C175 10µ-16V
R176-820E
R193 3K9
R194 5K6
C176 10µ 16V
R213-2K2
TS175 BC547
TS 176 BC558
R170 15K
R171 150E
TS170 BC557
TS171 BC547
R182 100E
IC 171 TBA 120T
C183 10µ 16V
R266 100E
R300 82E
C170 220µ 16V
R173 6K8
R174 150E
R175 330E
C172 47µ-16V
C171 47p
R191 270E
R177 10K
R179 8K2
TS172 BC547
C177 22µ 25V
R196 10E
C216 22n
R197 3K3
R195 2K2
R201 6K8
C180 220p
R188 68E
R189 470E
R192 10E
TS 180 BC 547
R150 470E
C173 22µ 16V
R172 10E
R200 6K8
C218 22µ 25V
CN1'
G'
CN4'
M'
AL CONN. "M" MOD. CROMA
AL MOD. PRESE 66017098
CN12'
L'
GN5'
8Ω
D'
D
R153 2E2
+ 25V
R154 100K
C152 1000µ 35V
C153 100n
D151 1N4148
IC 6 TDA 2030
C157 220n
C154 2n2
R155 100K
C150 1000µ 16V
D152 1N4148
R151 1E2
C151 220n
C156 47µ 25V
R156 100K
R152 18K
R157 680E
C155 47µ 25V
SW
220Vac RETE MAINS
SK1
C12 330n
U1 PTC
C11 47n
F1 2AT
2x12mH U2
C14 2n2
C13 220n
C15 2n2
R22 2E7
C16 1n 1Kv
C17 1n 1Kv
D11
4xBY133
D12
D13
D14
C18 1n 1Kv
C19 1n 1Kv
C20 220µ 385V
N'
L
N
L
DEGAUSSING COIL
TS2 BC307
TS3 BC327
D1 7V5 BZX79C
TS1 BC307
R1 3K3
R2 1K
R3 5K6
R29 100K
C2 10n
R4 3K3
C3 10µ 50V
R5 2K2
R6 270E
R7 1K
R8 1K
R26 15E
R27 10E
R11 1K
D21 D3 2xBA157
D4
D5 1N4007
R13 1M
C8 47n
R14 1K5
2xBA157
C7-47µ 50V
TS4 BC368
R10 0,82E
C5 680n
R12 680E
C6 4µ7
R9 1K5
C4 47n
D2 BZX79C 24V
C10 3n3 1K5v
TS5 BU508A
D9 BA 159
D6 BA157
R16 150E 9W
R17 330E
C1 10µ 50V
D10 BA157
R18 33E
MASSA PER TEST SU ALIMENTATORE
GROUND FOR SUPPLY TEST
MASSA NON ISOLATA DA RETE
MAINS NOT INSULATED BY GROUND


6035000172
6035000001/5
IC170 TDA 3562A
IC4 TDA 2594
IC5 TDA 1670A
IC1 LM 317 T
T1
66017161
CEA -SM42/211
PLESSEY-450.002.051
ELDOR - 2082.0052
TS5 BU508A
TS175 BC547
TS121 BF422
TS81 BD137
SOLO PER SECAM
ONLY FOR SECAM
GUADAGNO VERDE
GREN GAIN
GUADAGNO BLU
BLU GAIN
CORTOCIRCUITARE PER "PAL"
APERTI PER "PAL/SECAM"
SHORT CIRCUIT FOR "PAL"
OPEN FOR "PAL/SECAM"
A1-B1-C1
SOLO PER 110V
ONLY FOR 110V
SOLO PER 220V
ONLY FOR 220V
FREQ. ORIZZ.
HORIZ. FREQ.
FASE ORIZZ.
HORIZ. PHASE
LARGHEZZA
WIDTH
AMP V.
FREQ. V.
LIN. V.

RGB MODULE 66003201



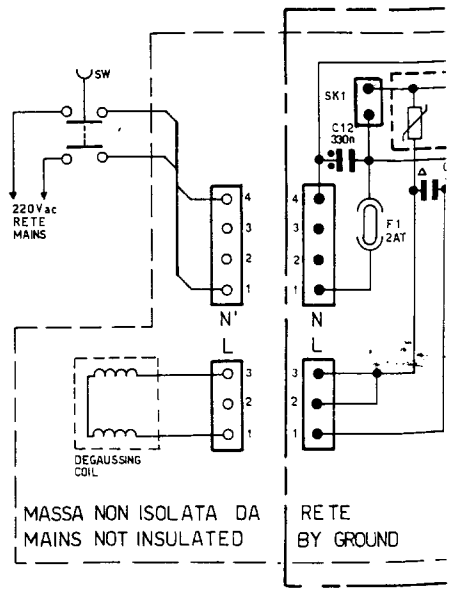
*	CRT	C 99	C 61	R 124	R 308
	A 51 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 59 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 66 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 66 EAK 50 X 01	240 n	1500 µ	330 K	1 B 5



INPUT CONNECTORS + ANALOG CONTROLS 66003383

CHROMA MODULE 66003040

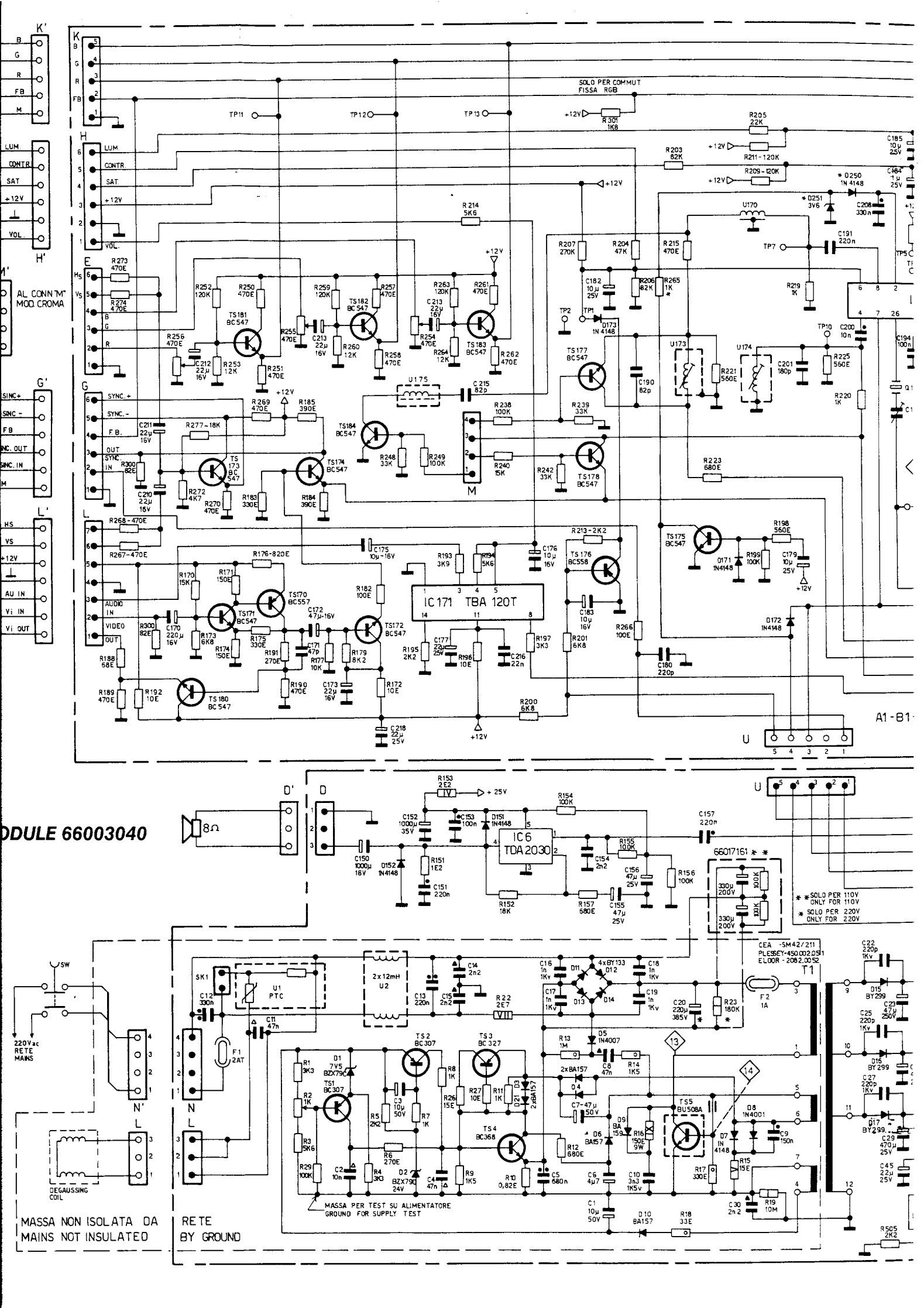
8Ω

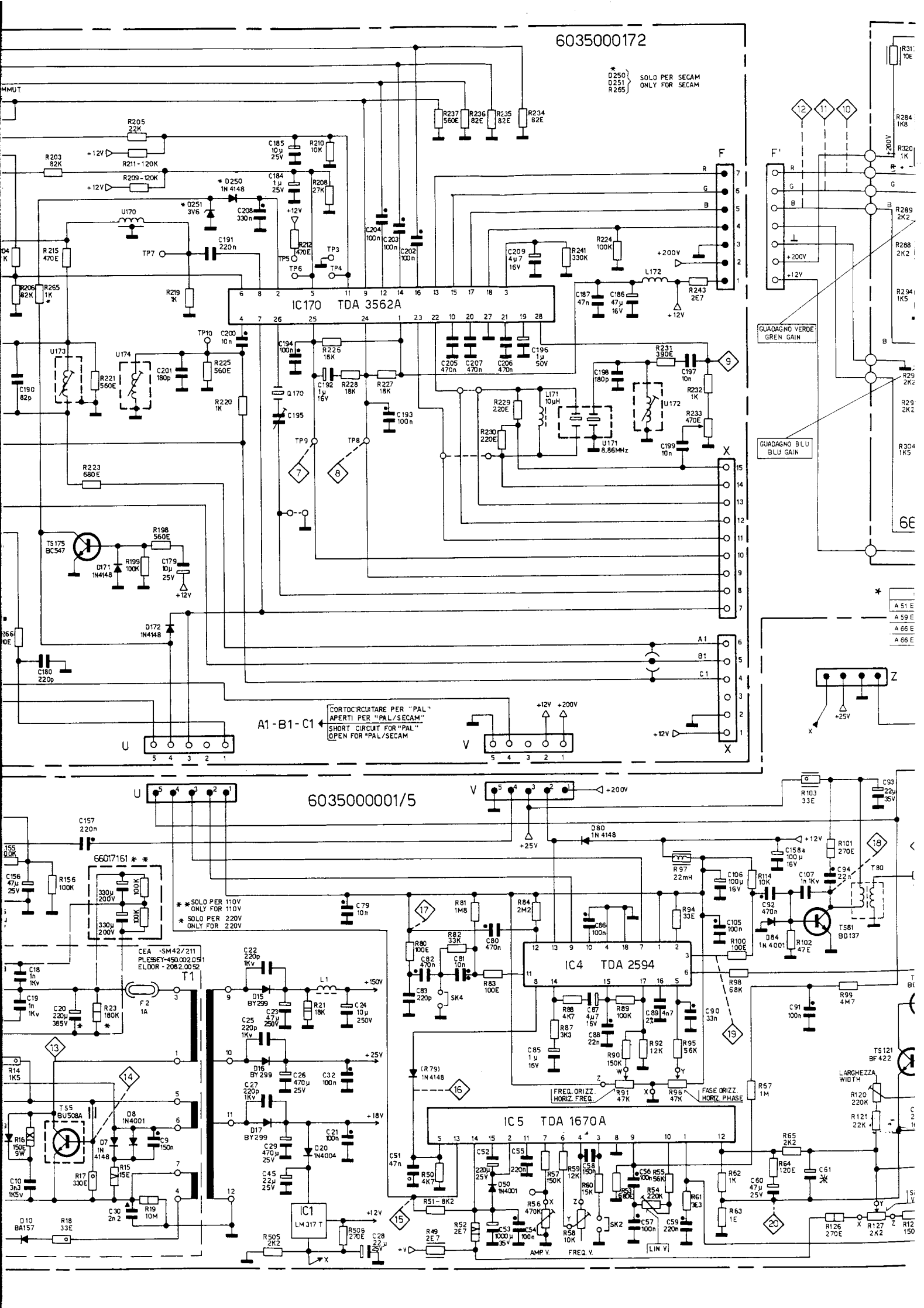


HANTAREX

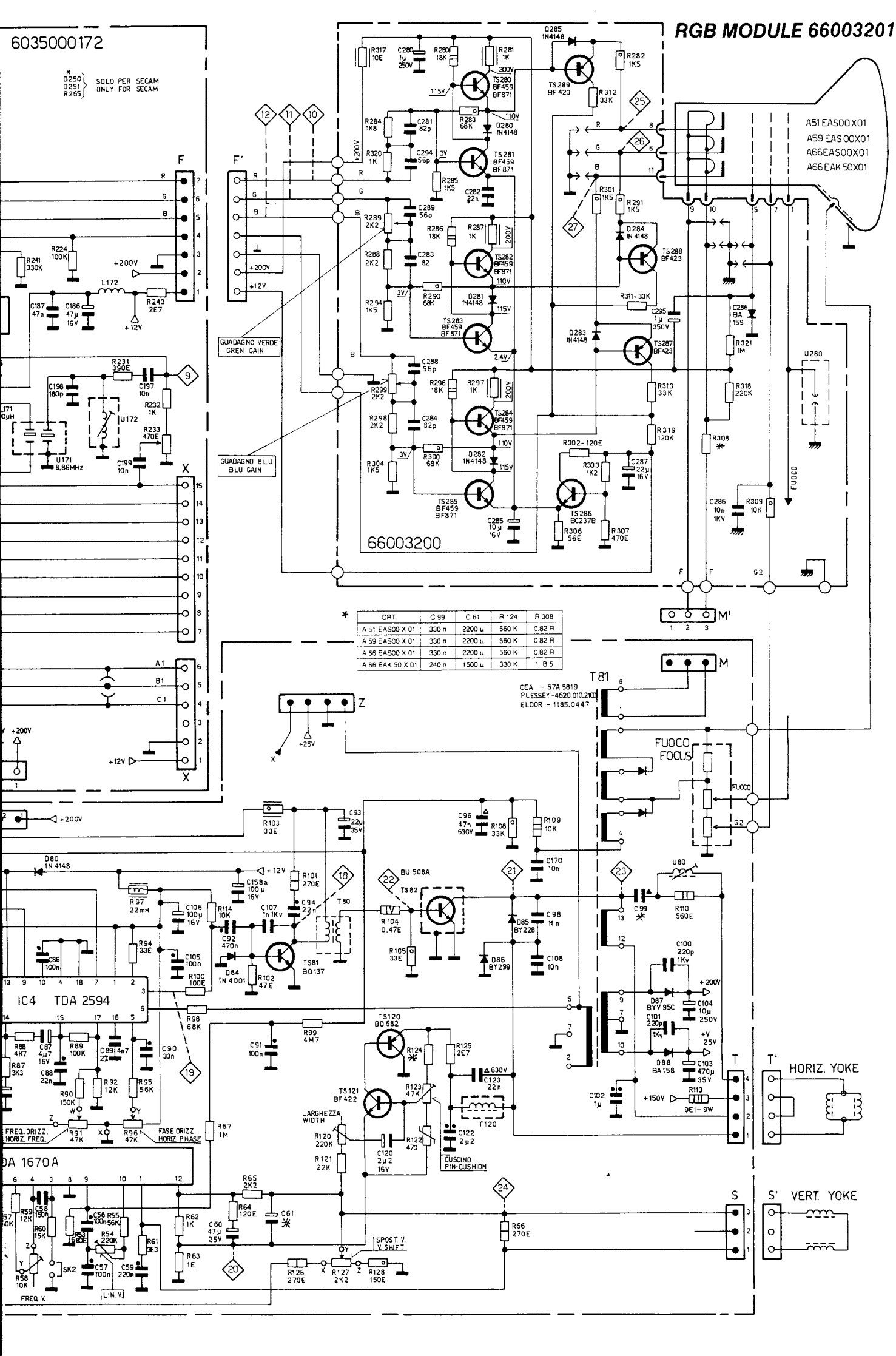
MOD. MTC9000/E SR 21" - 25" - 28"

CH. FAM. 66002906


DDULE 66003040
SOLO PER COMMUT. FISSA RGB
IC 171 TBA 120T
IC6 TDA 2030
TS170 BC557
TS171 BC547
TS172 BC547
TS173 BC547
TS174 BC547
TS175 BC547
TS176 BC558
TS177 BC547
TS178 BC547
TS180 BC547
TS181 BC547
TS182 BC547
TS183 BC547
TS184 BC547
TS2 BC307
TS3 BC 327
TS4 BC368
TS5 BU508A
TS1 BC307
U170
U173
U174
U175
66017161
CEA -5M42/211
PLESSEY-450.002.051
ELDOR - 2082.0052
220Vac RETE MAINS
DEGAUSSING COIL
MASSA NON ISOLATA DA MAINS NOT INSULATED
RETE BY GROUND
MASSA PER TEST SU ALIMENTATORE
GROUND FOR SUPPLY TEST
SOLO PER 110V ONLY FOR 110V
SOLO PER 220V ONLY FOR 220V
AL CONN.'M' MOD. CROMA
A1-B1

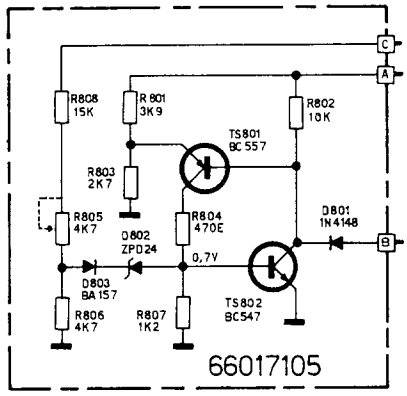

6035000172
6035000001/5
IC170 TDA 3562A
IC4 TDA 2594
IC5 TDA 1670A
IC1 LM 317 T
T1
T55 BU508A
TS175 BC547
TS121 BF422
TS81 BD137
D250 D251 R265 SOLO PER SECAM ONLY FOR SECAM
A1-B1-C1
CORTOCIRCUITARE PER "PAL" APERTI PER "PAL/SECAM"
SHORT CIRCUIT FOR "PAL" OPEN FOR "PAL/SECAM"
SOLO PER 110V ONLY FOR 110V
SOLO PER 220V ONLY FOR 220V
CEA -SM42/211
PL655EY-450.002.051
ELDOR - 2082.0052
66017161
FREQ. ORIZZ. HORIZ. FREQ.
FASE ORIZZ. HORIZ. PHASE
AMP. V.
FREQ. V.
LIN. V.
LARGHEZZA WIDTH
GUADAGNO VERDE GREN GAIN
GUADAGNO BLU BLU GAIN
+12V
+200V
+150V
+25V
+18V

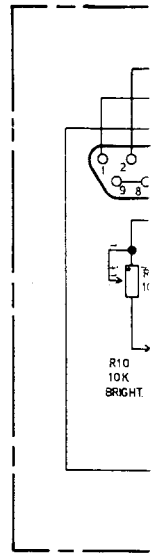
RGB MODULE 66003201



*	CRT	C 99	C 61	R 124	R 308
	A 51 EAS00 X 01	330 n	2200 µ	560 K	0,82 R
	A 59 EAS00 X 01	330 n	2200 µ	560 K	0,82 R
	A 66 EAS00 X 01	330 n	2200 µ	560 K	0,82 R
	A 66 EAK 50 X 01	240 n	1500 µ	330 K	1 B 5

INPUT CONNECTORS + ANALOG CONTROLS 66003383



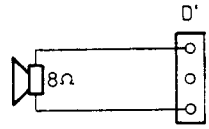


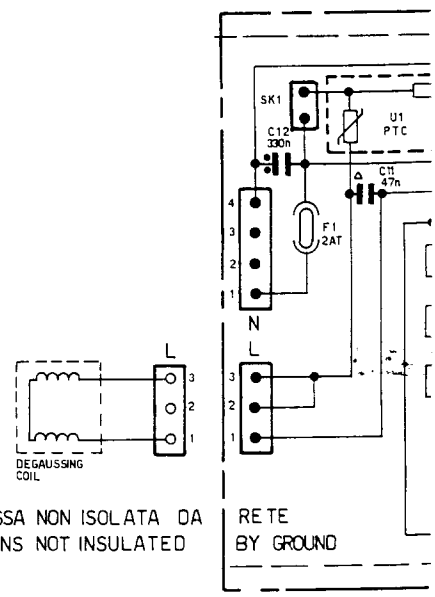
X RAY PROTECTION MODULE 66003384

ADJUSTMENT

- *R805 all included*
- *With aligned chassis, take off the connector from Pin 6 - T81 and send 135 Vcc throught the connector: C input of protection circuit (R808).*
- *Adjust R805 till protection circuit blocks the + 12V of I.C. 1-LM317.*
- *Plug again the connector to Pin 6 - TS81.*
- *Seal R805 with sylicon to avoid any adjustment.*

CHRC



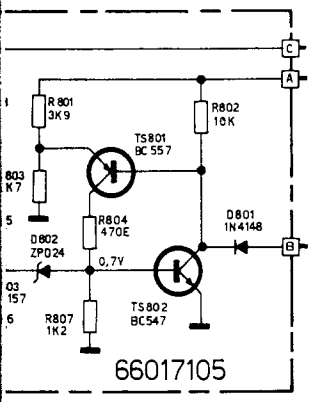


HANTAREX

MOD. MTC9000/M SR "28 USA

CH. FAM. 66002901

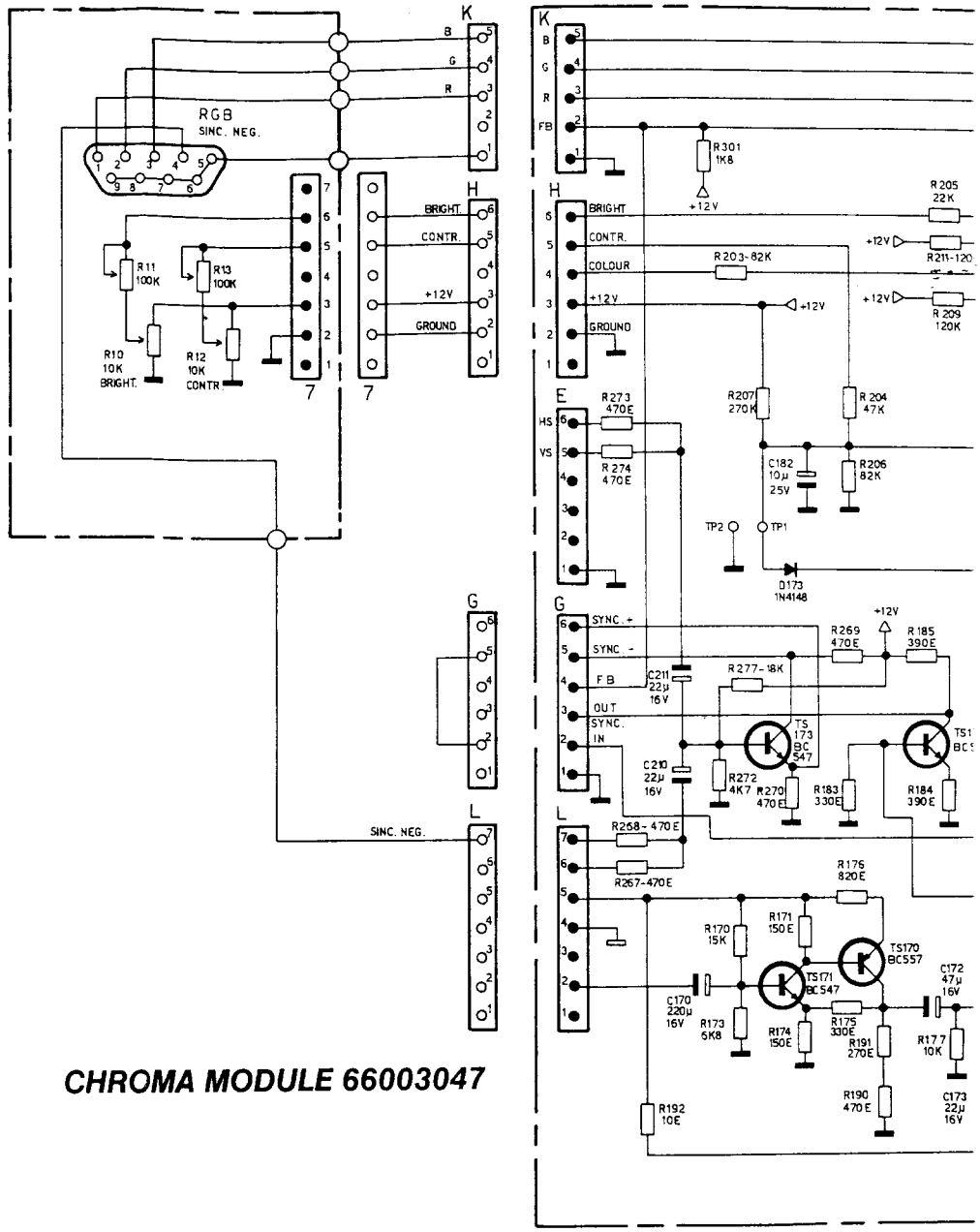
OG CONTROLS 66003383



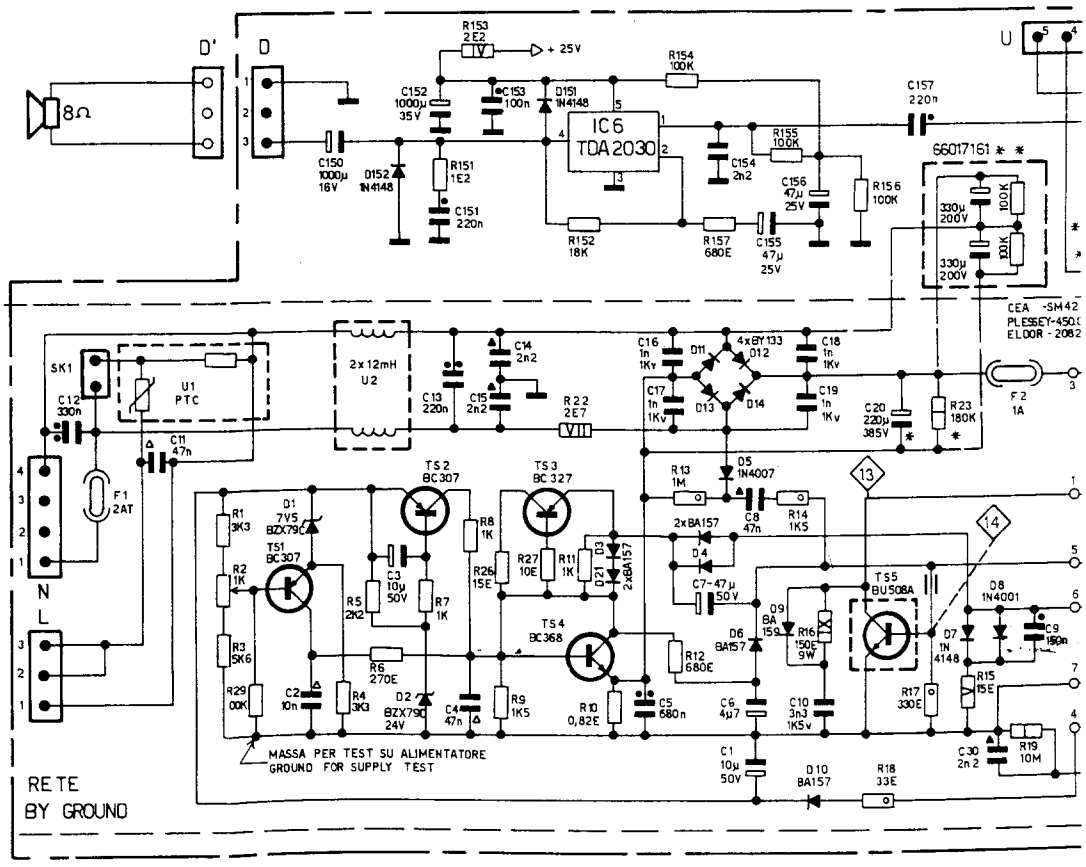
CTION MODULE 66003384

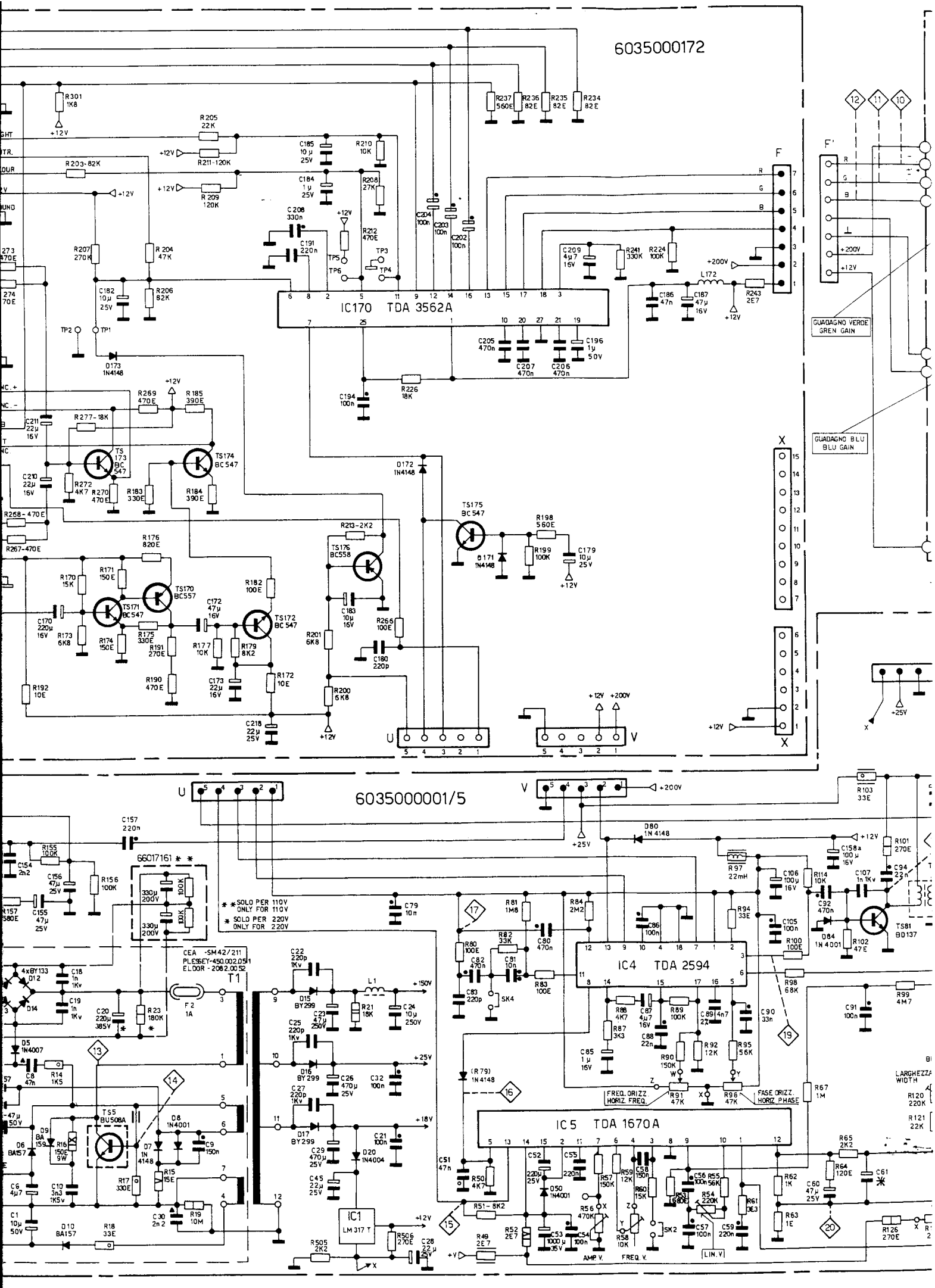
off the
1 and send 135
or: C input of

circuit blocks
7.
to Pin 6 - TS81.
avoid any

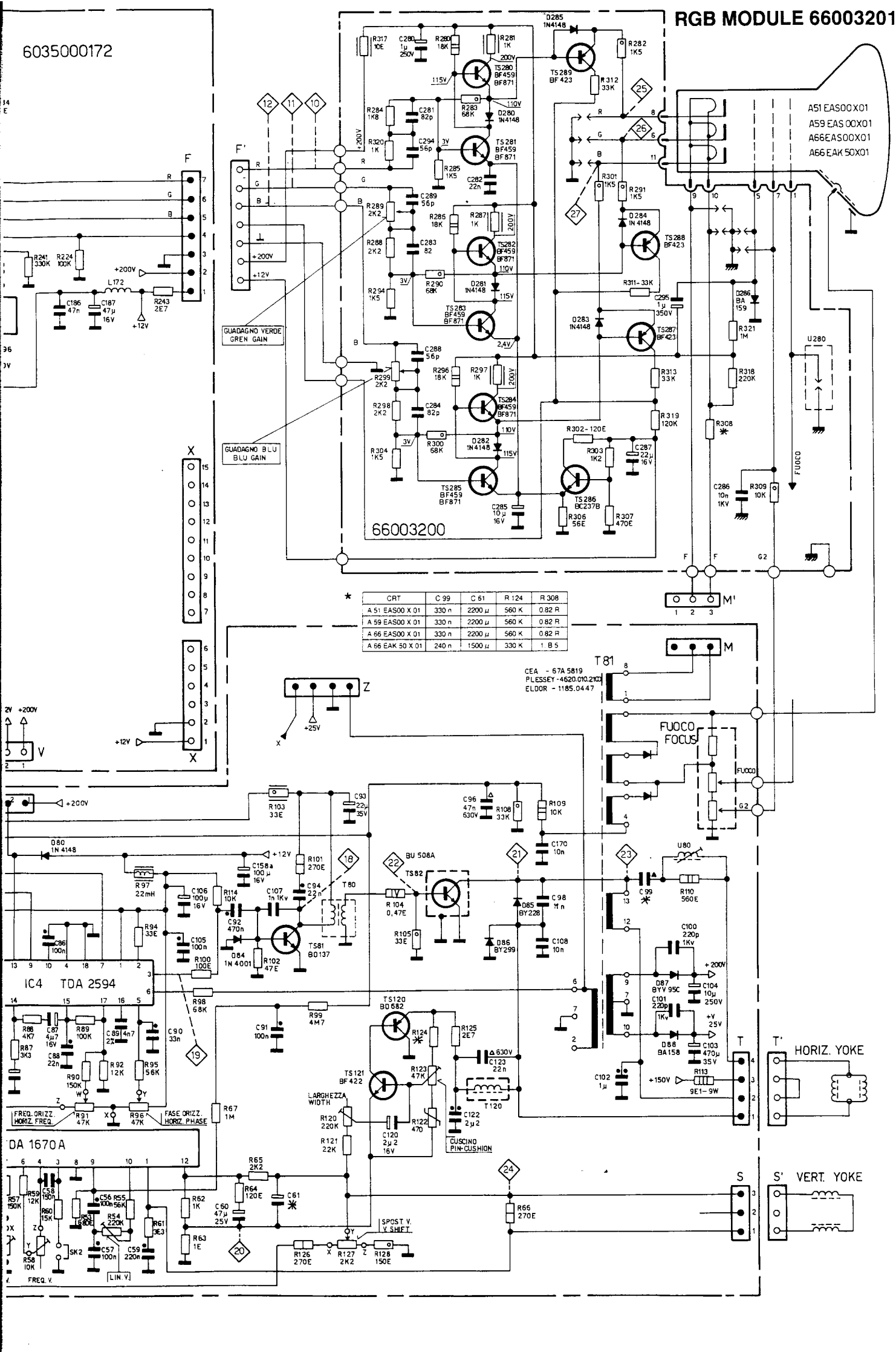


CHROMA MODULE 66003047



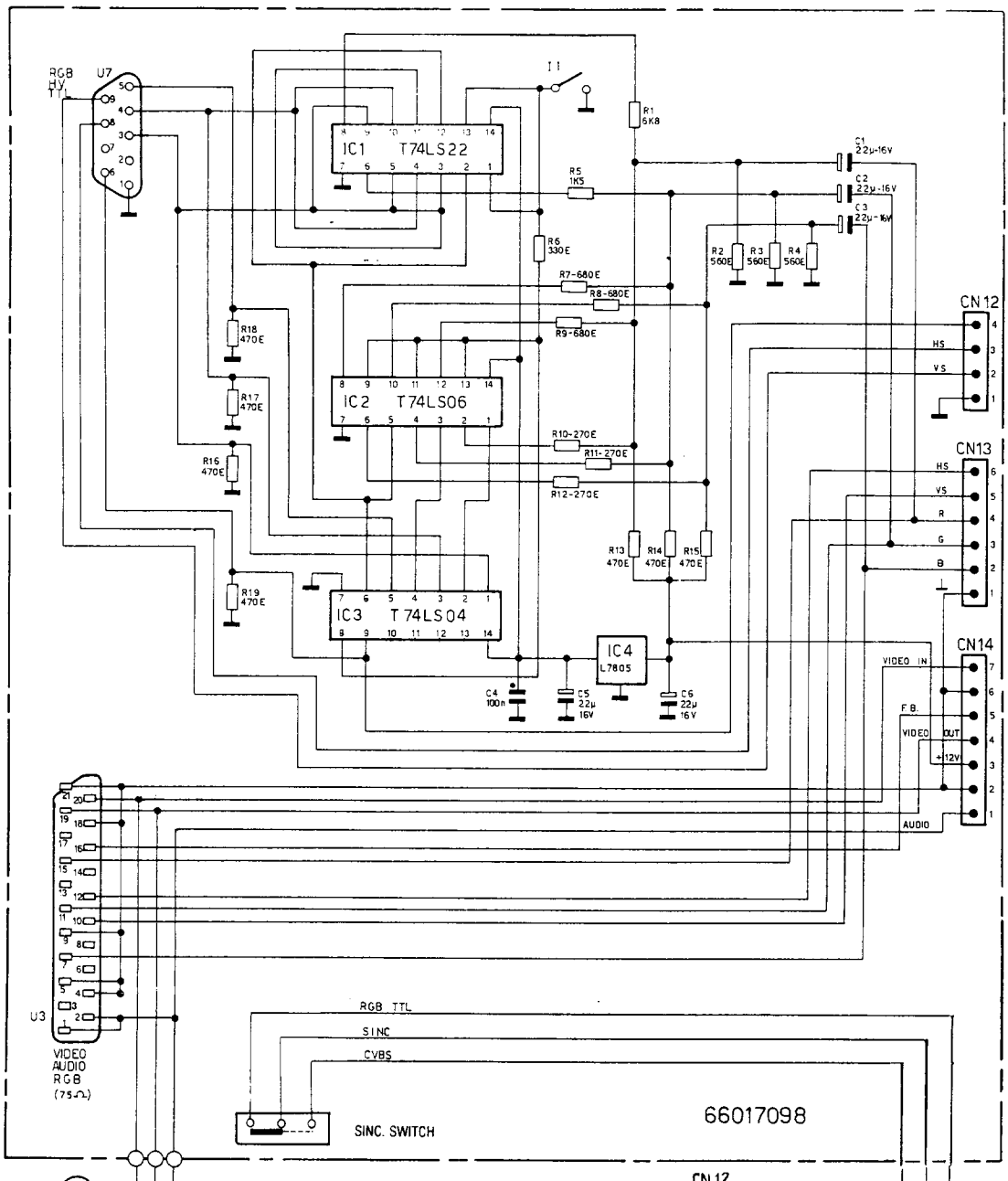

6035000172
IC170 TDA 3562A
F
F'
X
U
V
GUADAGNO VERDE
GREN GAIN
GUADAGNO BLU
BLU GAIN
6035000001/5
IC4 TDA 2594
IC5 TDA 1670A
IC1
LM 317 T
T1
TS5
BU508A
66017161 * *
* *SOLO PER 110V
ONLY FOR 110V
* SOLO PER 220V
ONLY FOR 220V
CEA -SM42/211
PLESSEY-450.002.051
ELDOR - 2082.0052
FREQ. ORIZZ.
HORIZ FREQ.
FASE ORIZZ.
HORIZ PHASE
AMP. V.
FREQ. V.
LIN. V.
LARGHEZZA
WIDTH

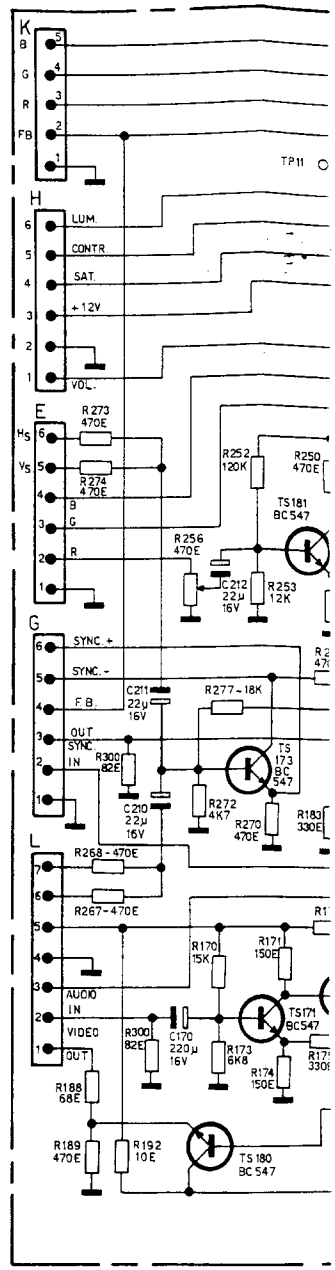
RGB MODULE 66003201

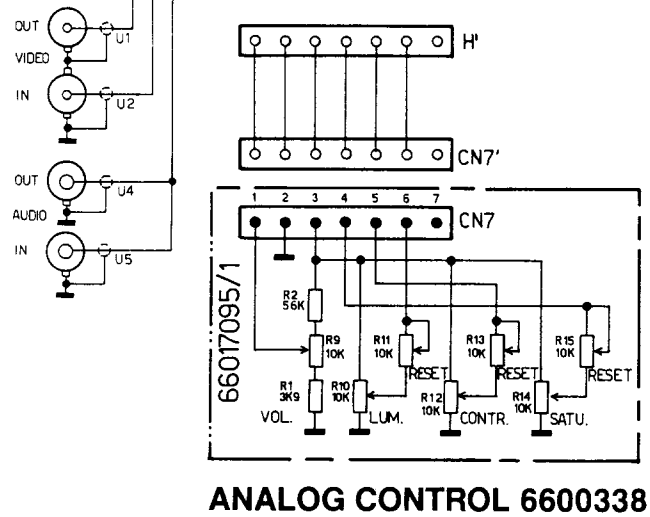


CRT	C 99	C 61	R 124	R 308
A 51 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 59 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAK 50 X 01	240 n	1500 µ	330 K	1. 8.5

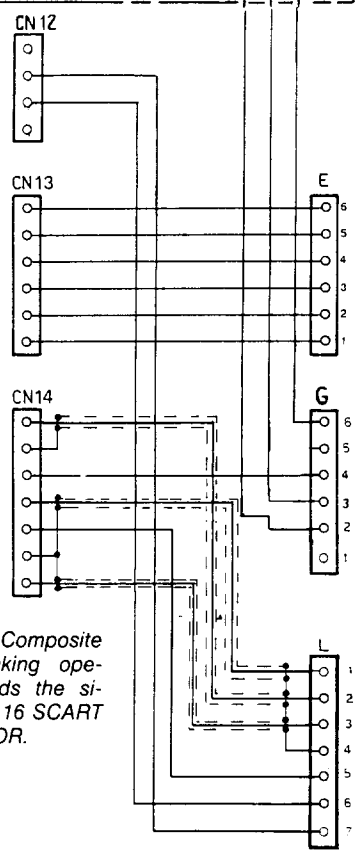
INPUT CONNECTOR « INTENSIFIER 66003379



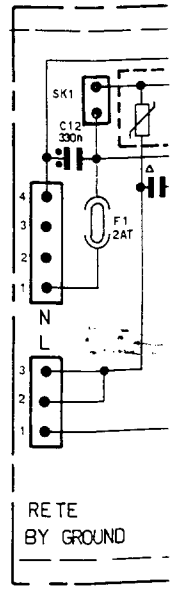


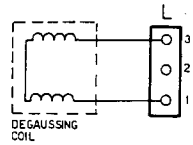


ANALOG CONTROL 66003381



8Ω





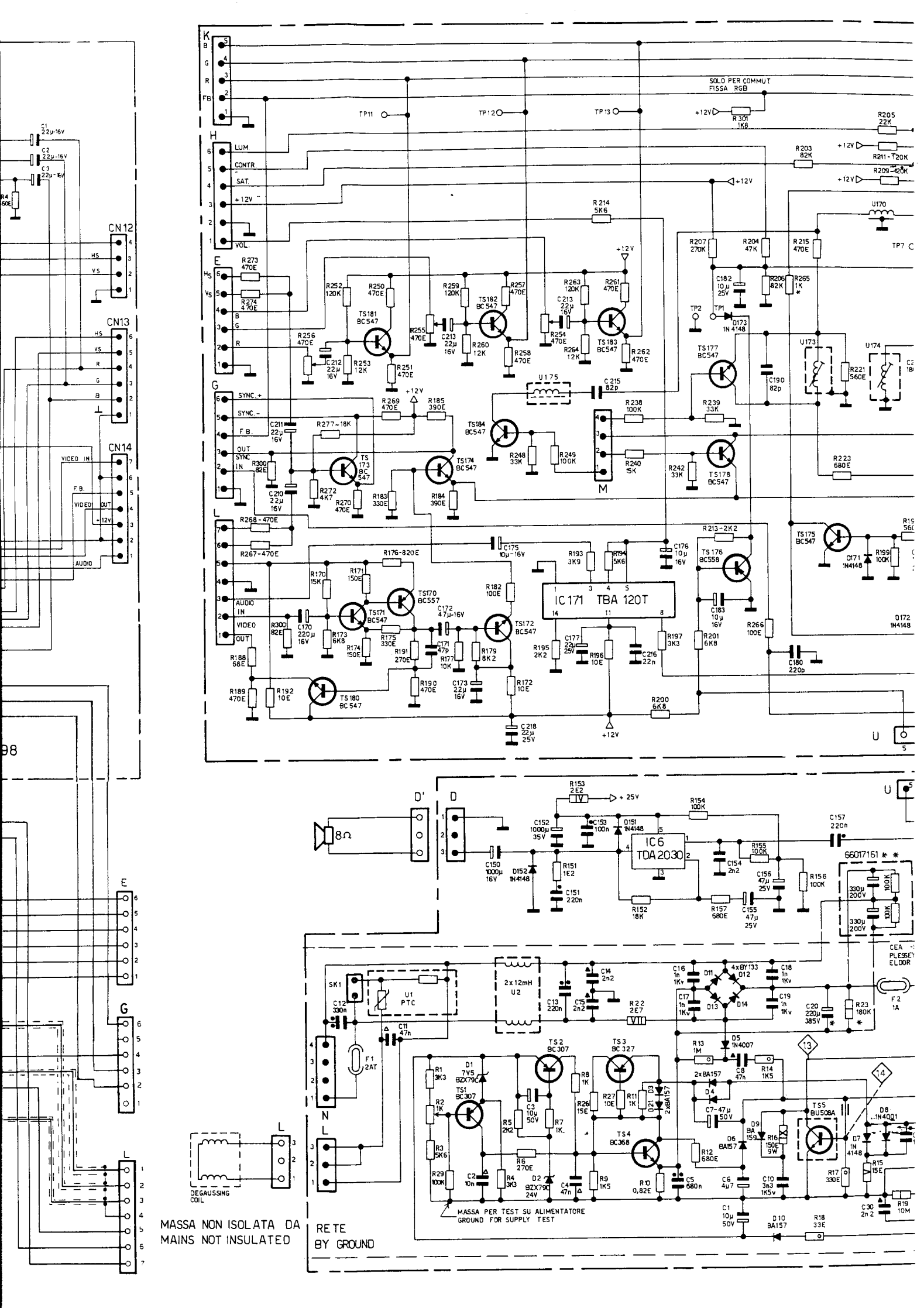
MASSA NON ISOLATA DA RETE
MAINS NOT INSULATED BY GROUND

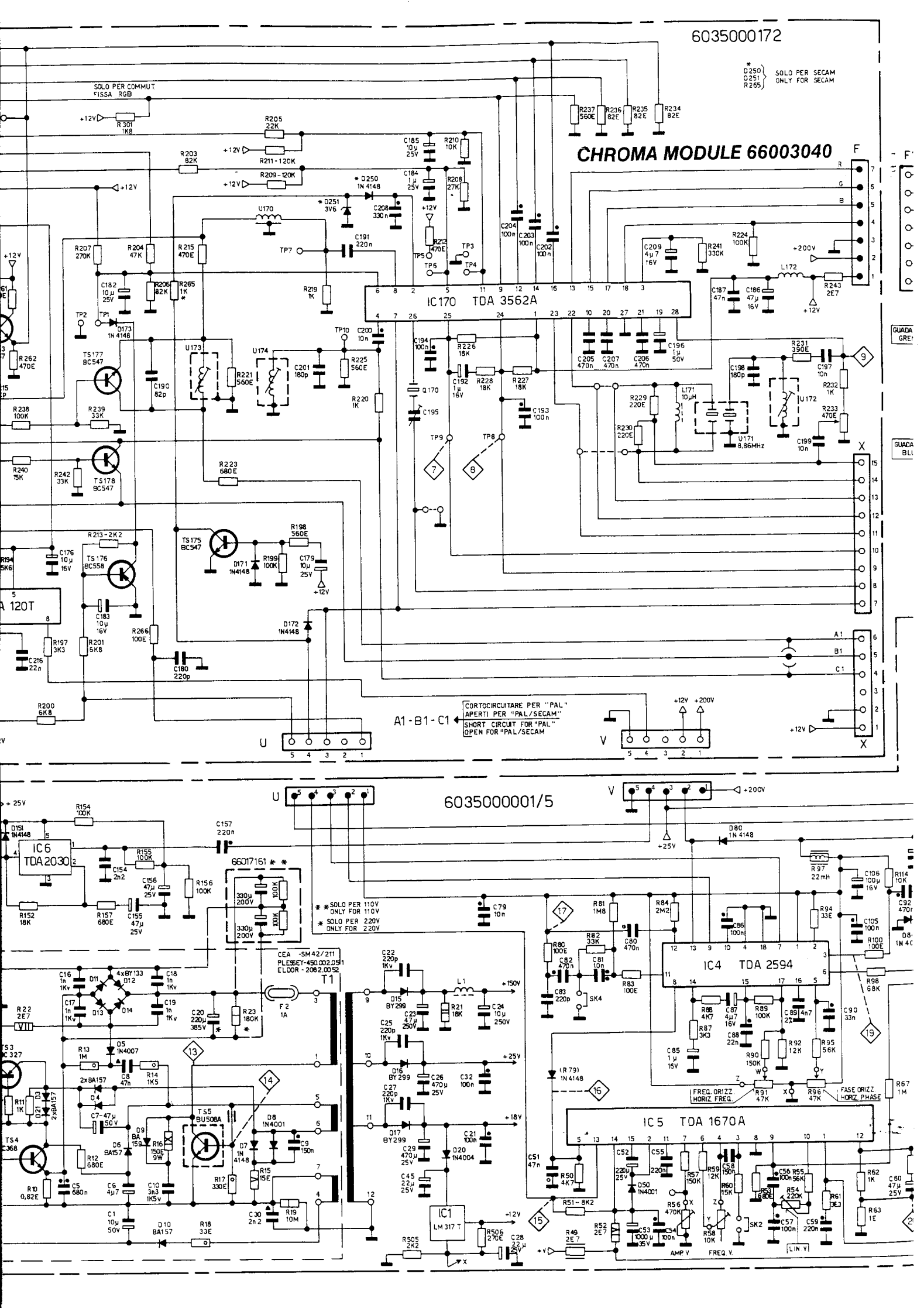
HANTAREX

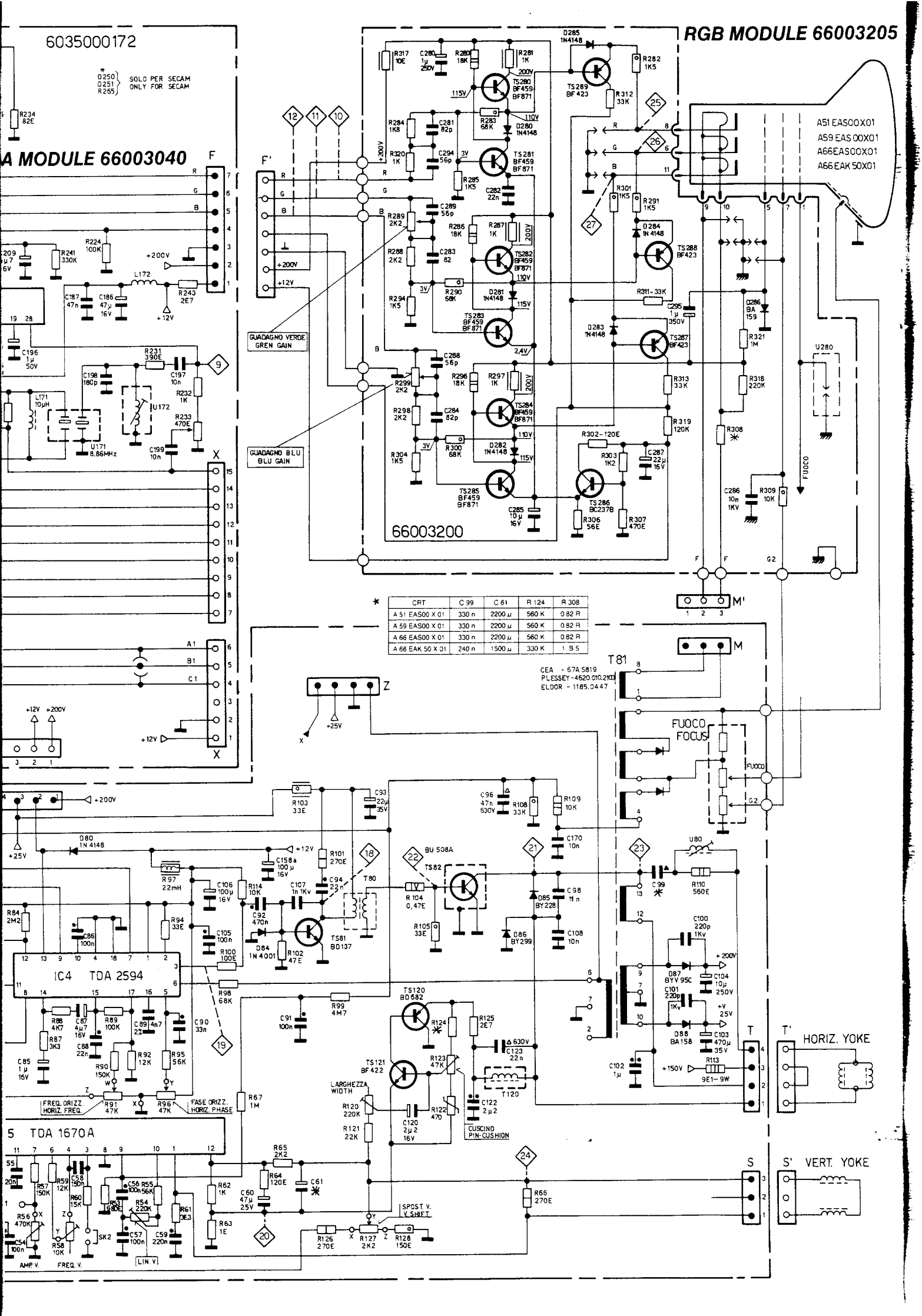
MOD. MTC9000/P SR 21" - 25" - 28" UK

CH. FAM. 66002904

NOTE: *RGB/TTL - Composite video blanking operation, sends the signal to Pin 16 SCART CONNECTOR.*

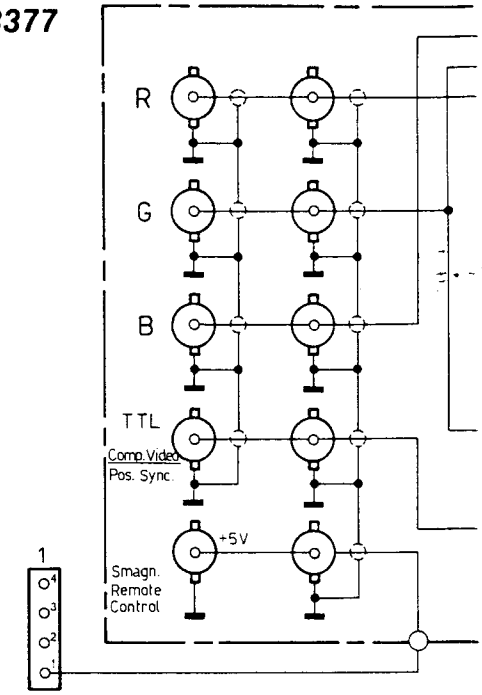

IC 171 TBA 120T
IC6 TDA 2030
TS5 BU508A
SOLO PER COMMUT FISSA RGB
CN12
CN13
CN14
8Ω
DEGAUSSING COIL
MASSA NON ISOLATA DA MAINS NOT INSULATED
RETE BY GROUND
MASSA PER TEST SU ALIMENTATORE GROUND FOR SUPPLY TEST

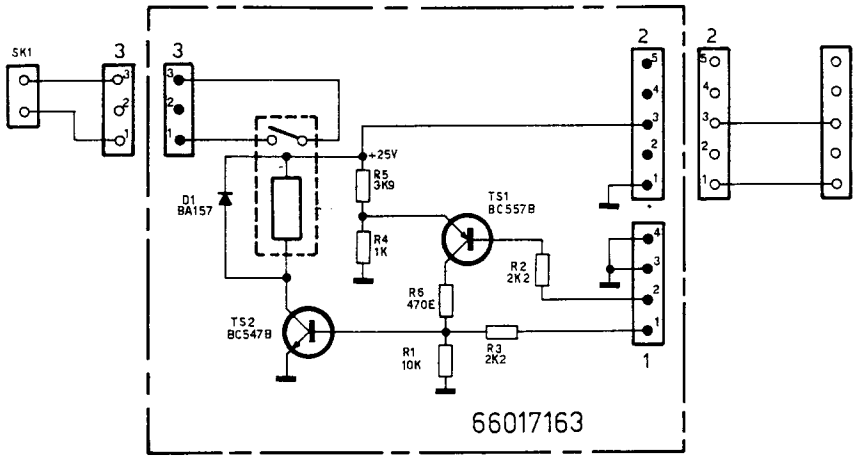

6035000172
CHROMA MODULE 66003040
SOLO PER COMMUT FISSA RGB
* D250 D251 R265 SOLO PER SECAM ONLY FOR SECAM
IC170 TDA 3562A
IC6 TDA2030
IC4 TDA 2594
IC5 TDA 1670A
IC1 LM 317 T
TS175 BC547
TS176 BC558
TS177 BC547
TS178 BC547
TS5 BU508A
U170
U171 8,86MHz
U172
U173
U174
L171 10µH
L172
T1
66017161 * *
CEA -SM42/211
PLESSEY-450.002.051
ELDOR - 2082.0052
* * SOLO PER 110V ONLY FOR 110V
* SOLO PER 220V ONLY FOR 220V
CORTOCIRCUITARE PER "PAL" APERTI PER "PAL/SECAM"
SHORT CIRCUIT FOR "PAL" OPEN FOR "PAL/SECAM"
A1 - B1 - C1
6035000001/5
FREQ. ORIZZ. HORIZ. FREQ.
FASE ORIZZ. HORIZ. PHASE
AMP V
FREQ. V.
LIN. V.
GUADA GRE
GUADA BL



CRT	C 99	C 61	R 124	R 308
A 51 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 59 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAK 50 X 01	240 n	1500 µ	330 K	1.9.5

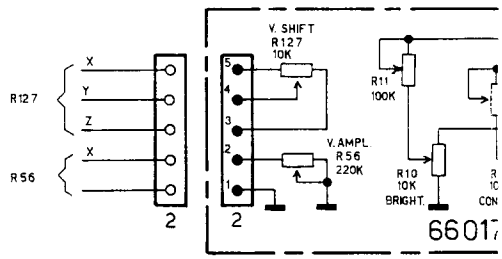
INPUT CONNECTOR 66003377



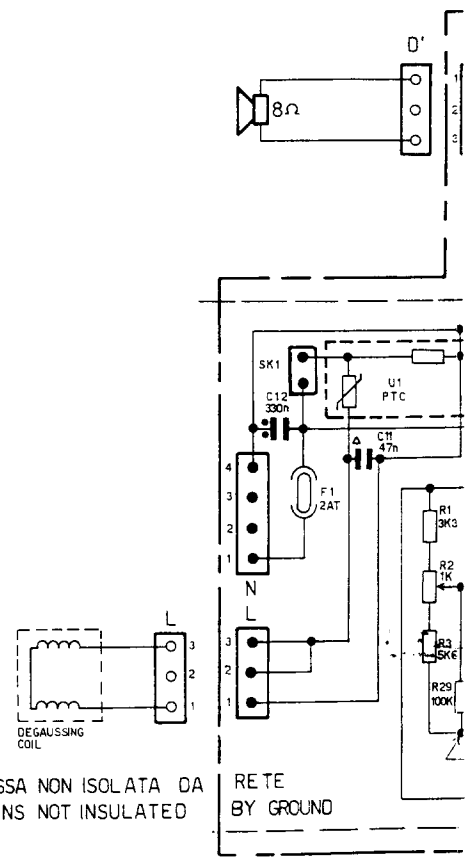


DEGAUS.REMOTE CONTROL 66003375

ANALOG CONTROLS 66003376



CHROM



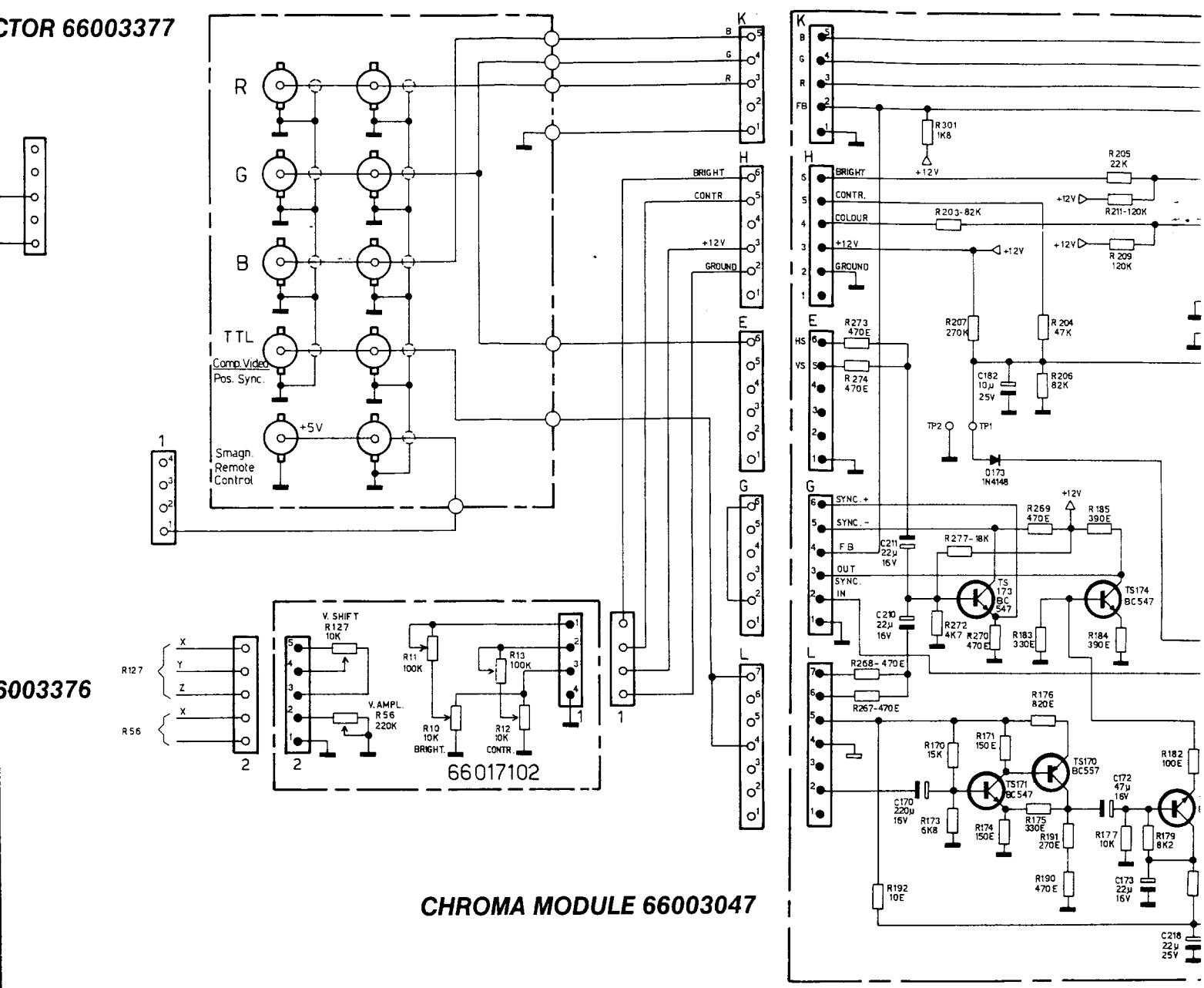
HANTAREX

MOD. MTC9000/M SR 28" T

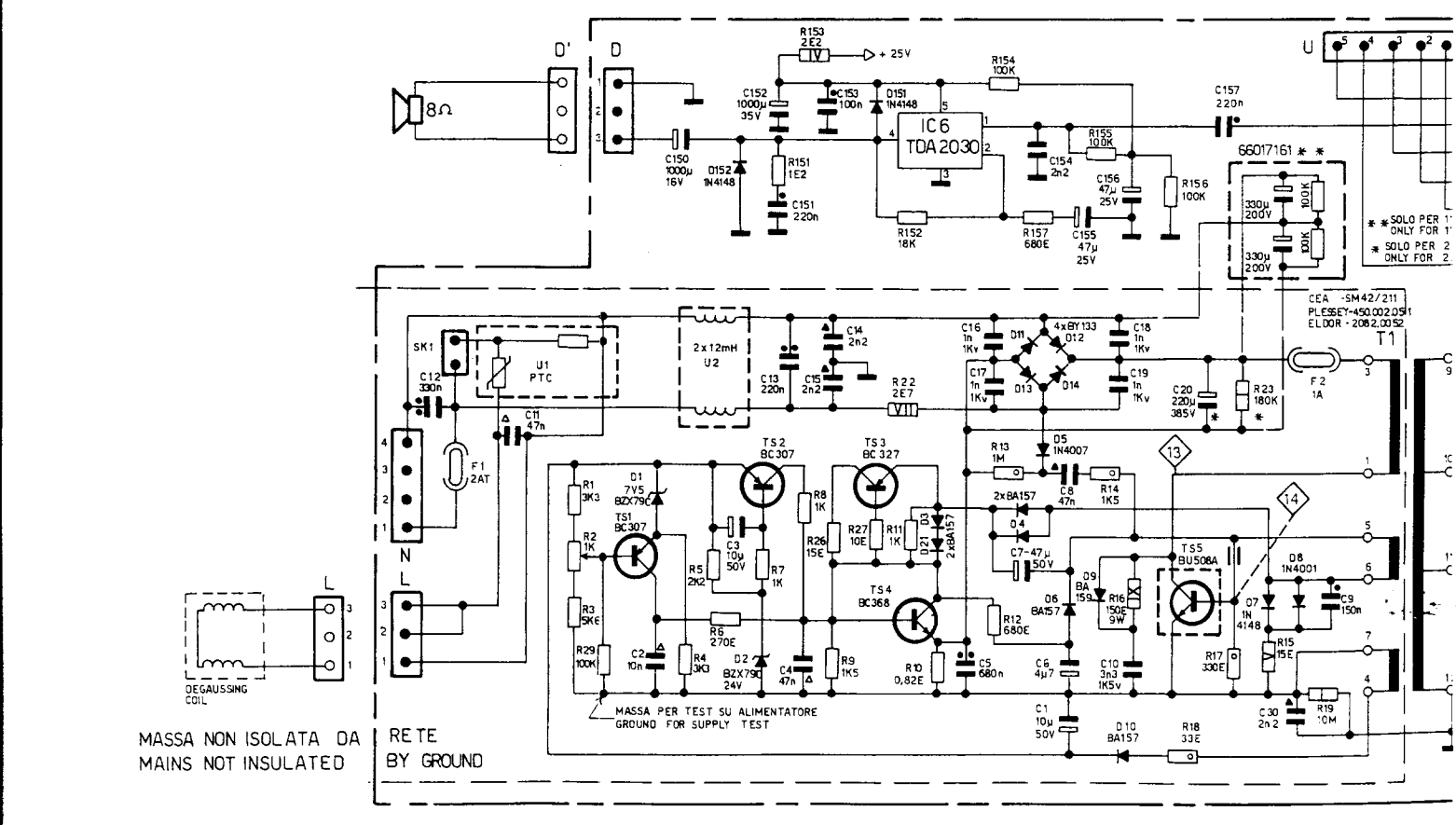
CH. FAM 66002903

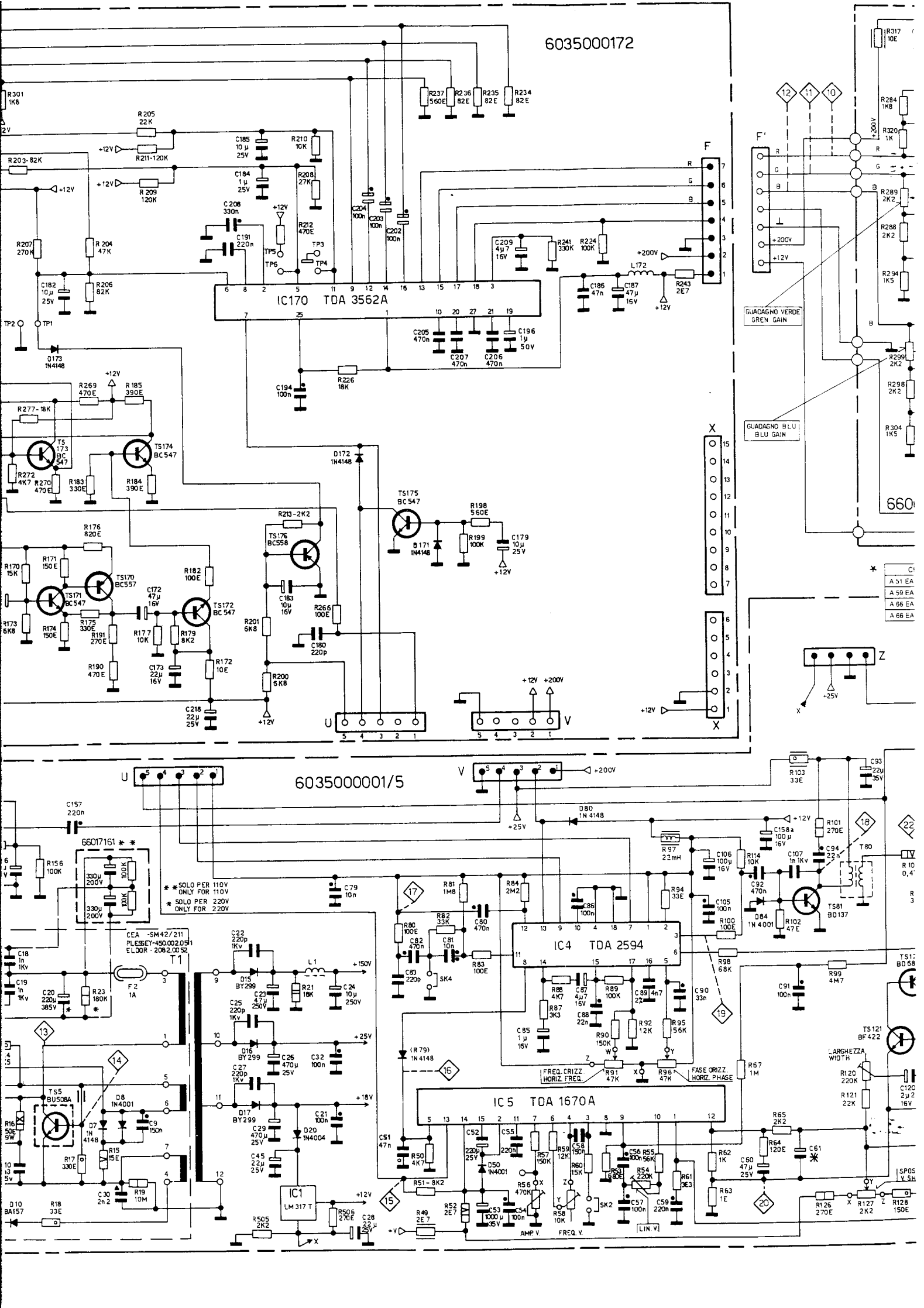
CTOR 66003377

6003376



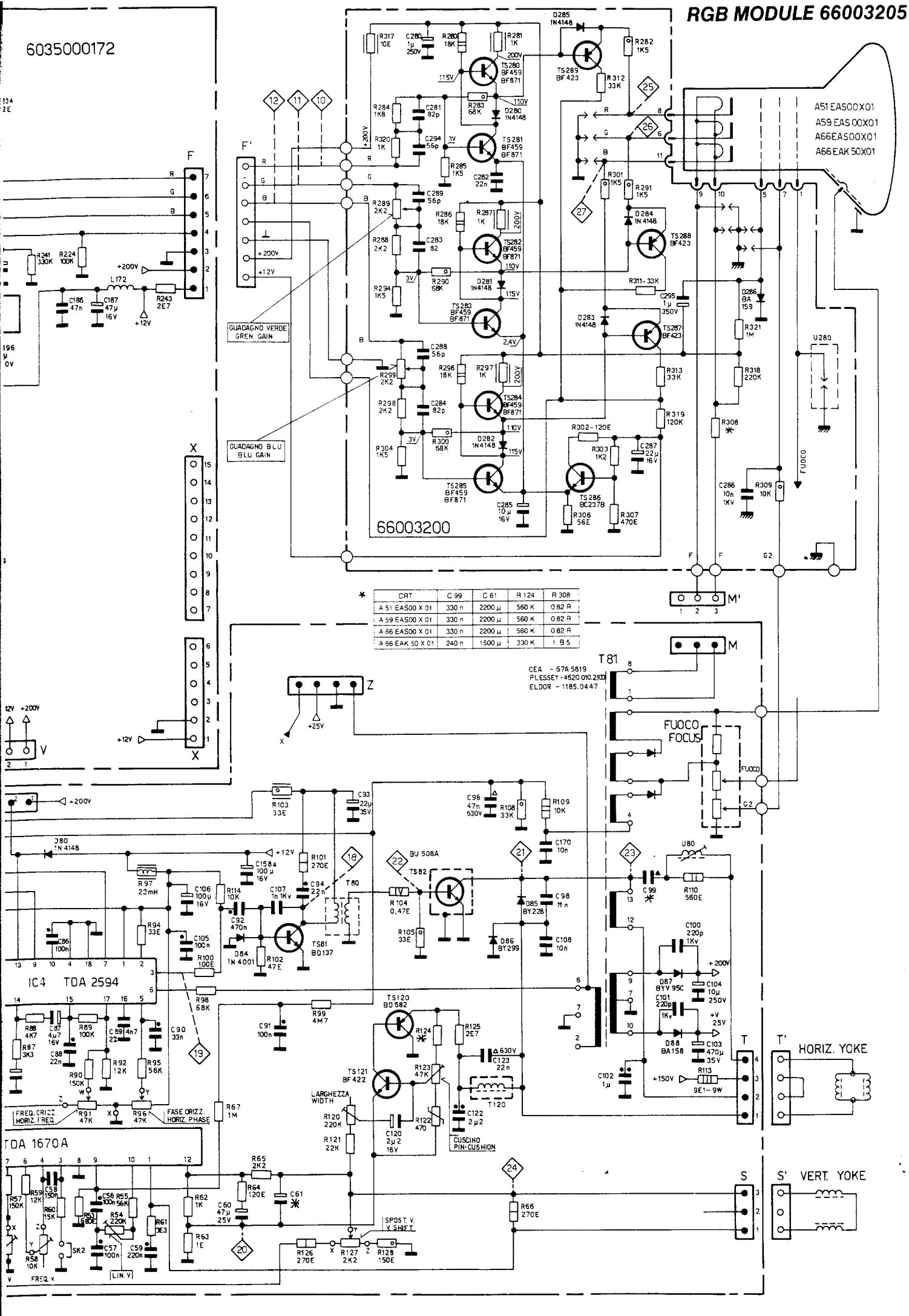
CHROMA MODULE 66003047




6035000172
IC170 TDA 3562A
IC4 TDA 2594
IC5 TDA 1670A
6035000001/5
GUADAGNO VERDE
GREN GAIN
GUADAGNO BLU
BLU GAIN
* SOLO PER 110V
ONLY FOR 110V
* SOLO PER 220V
ONLY FOR 220V
FREQ. CRIZZ.
HORIZ. FREQ.
FASE ORIZZ.
HORIZ. PHASE
LARGHEZZA
WIDTH
AMP V.
FREQ. V.
LIN. V.

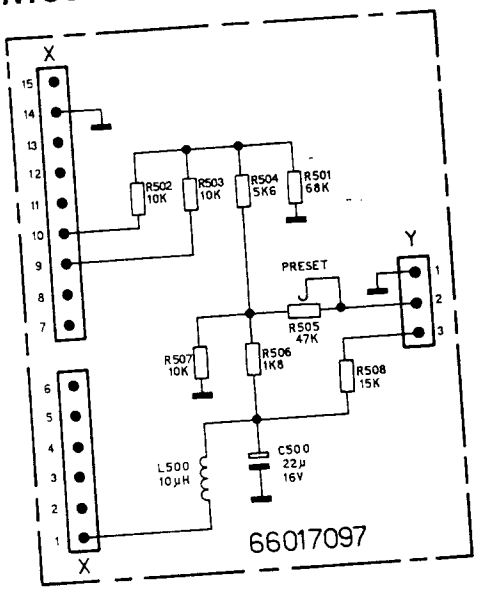
RGB MODULE 66003205

6035000172

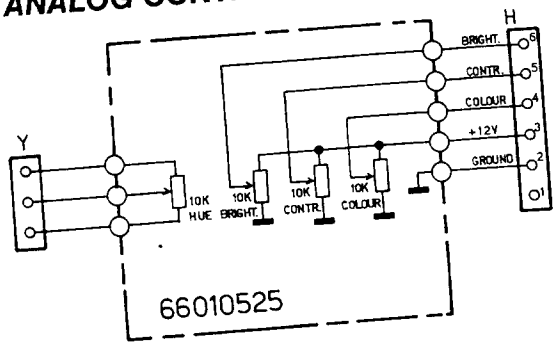


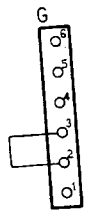
*	CRT	C 99	C 61	R 124	R 308
	A 51 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 59 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 66 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
	A 66 EAK 50 X 01	240 n	1500 µ	330 K	1.8 5

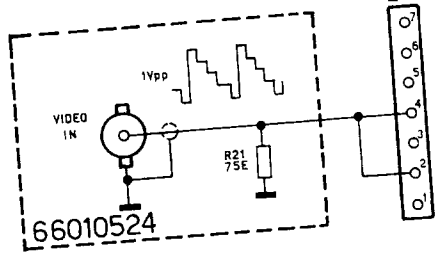
NTSC ADAPTOR 66003370



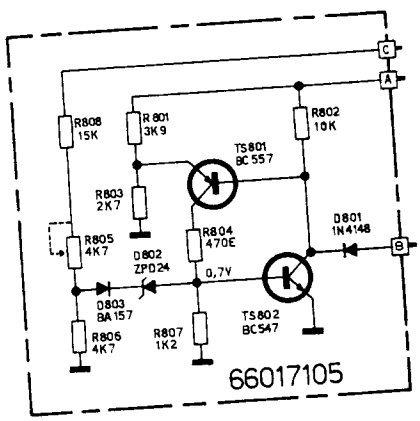
ANALOG CONTROLS 66003359



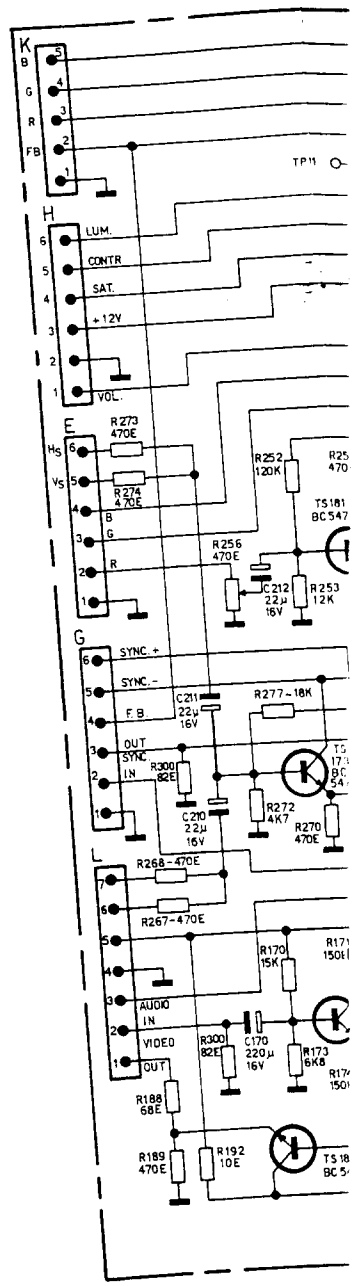




INPUT CONNECTOR 66003358



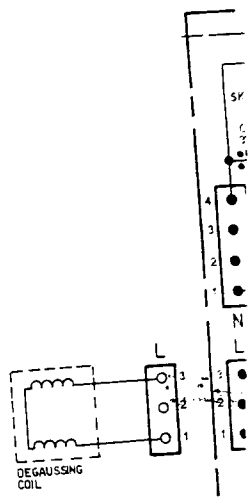
X RAY PROTECTION MODULE 66003384



CHROMA MODULE 66003045

ADJUSTMENT

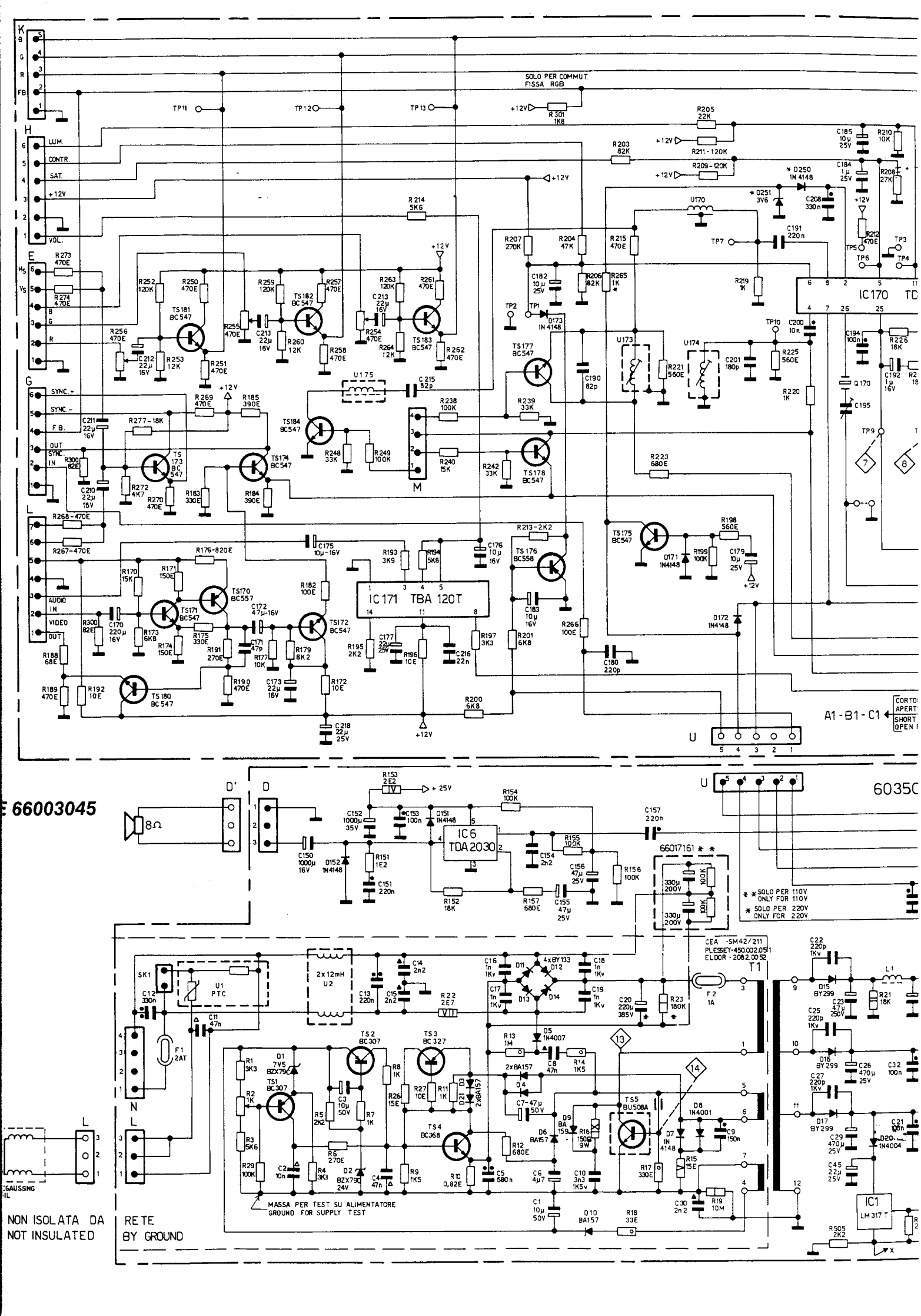
- *R805 all included*
- *With aligned chassis, take off the connector from Pin 6 - T81 and send 135 Vcc throught the connector: C input of protection circuit (R808).*
- *Adjust R805 till protection circuit blocks the + 12V of I.C. 1-LM317.*
- *Plug again the connector to Pin 6 - TS81.*
- *Seal R805 with sylicon to avoid any adjustment.*

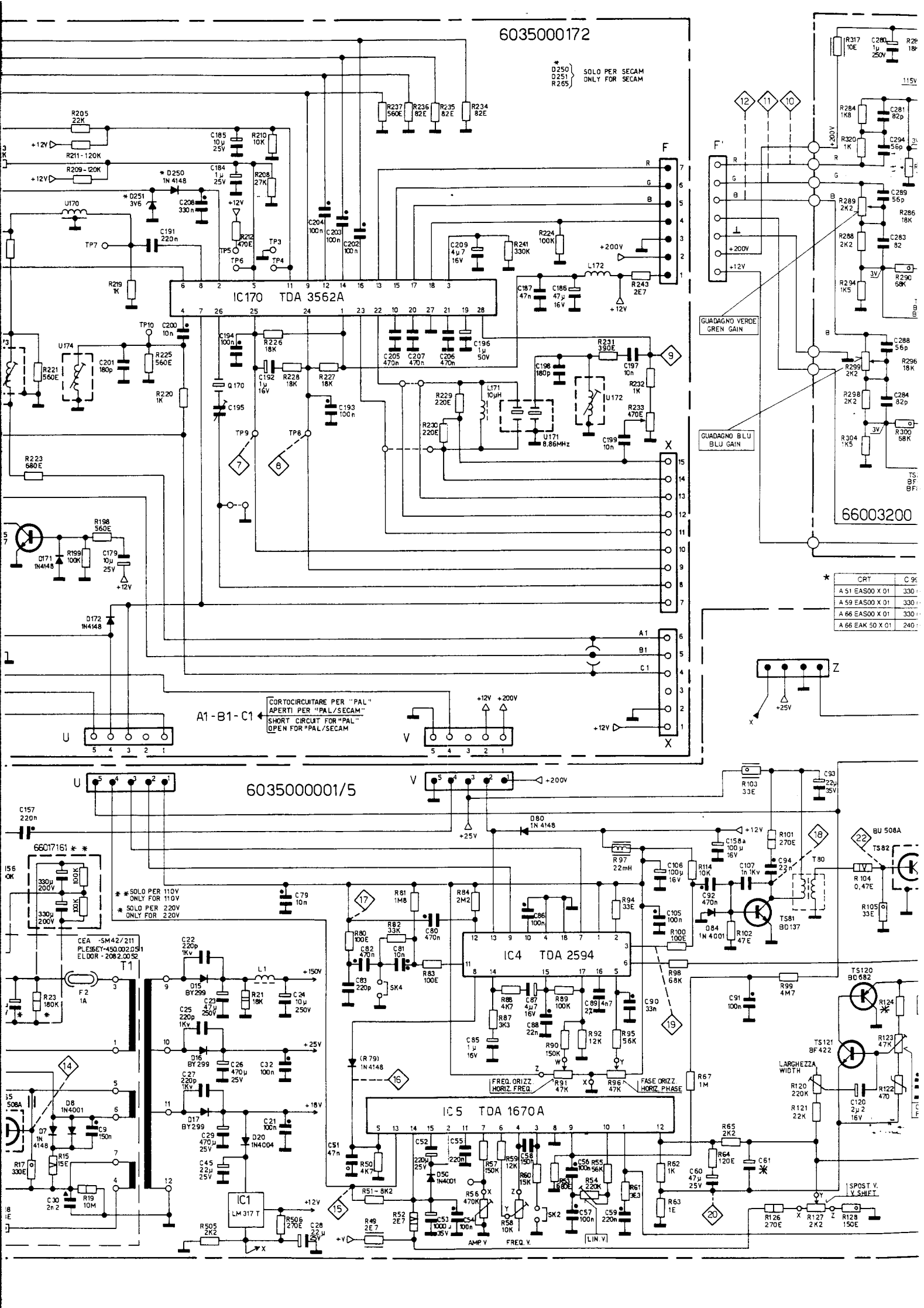


HANTAREX

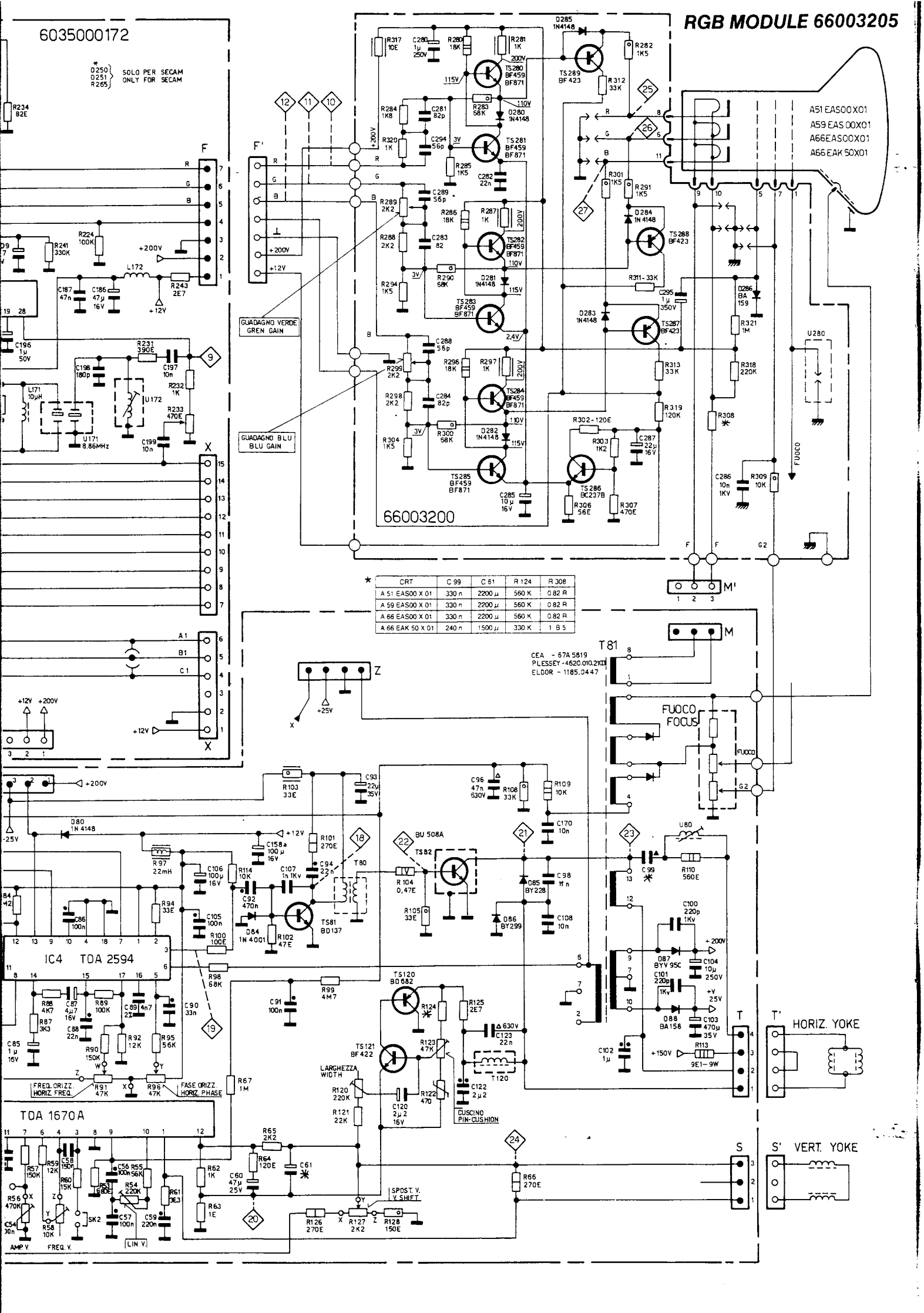
MOD. MTC9000/OF SR 28'' NTSC

CH. FAM. 66002901

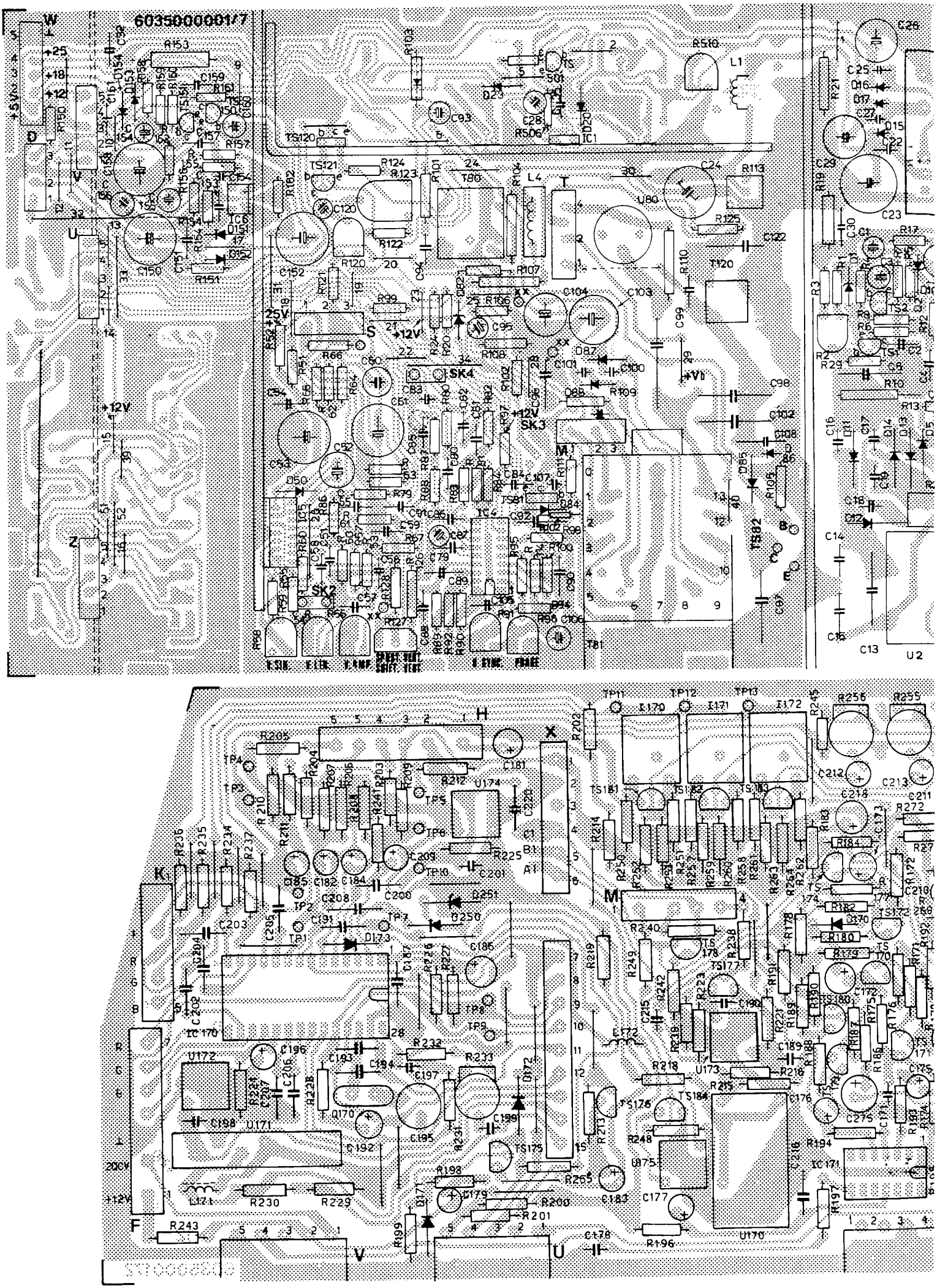

SOLO PER COMMUT. FISSA RGB
+12V
TP11
TP12
TP13
R301 1K8
R205 22K
R211 - 120K
R209 - 120K
R203 82K
R214 5K6
LUM.
CONTR.
SAT.
VOL.
SYNC.+
SYNC.-
F.B.
OUT SYNC. IN
VIDEO OUT
AUDIO IN
IC171 TBA 120T
IC170 TD
U170
U173
U174
U175
TS177 BC547
TS178 BC547
TS180 BC547
TS181 BC547
TS182 BC547
TS183 BC547
TS184 BC547
TS170 BC557
TS171 BC547
TS172 BC547
TS173 BC547
TS174 BC547
TS175 BC547
TS176 BC558
D171 1N4148
D172 1N4148
D173 1N4148
* D250 1N4148
* D251 3V6
A1 - B1 - C1
U
M
L
E
G
66003045
8Ω
D'
D
IC6 TDA 2030
R153 2E2
+25V
R154 100K
C152 1000µ 35V
C153 100n
D151 1N4148
C150 1000µ 16V
D152 1N4148
R151 1E2
C151 220n
R152 18K
R155 100K
C154 2n2
R156 100K
R157 680E
C155 47µ 25V
C156 47µ 25V
C157 220n
66017161 * *
330µ 200V
100K
* * SOLO PER 110V ONLY FOR 110V
* SOLO PER 220V ONLY FOR 220V
60350
CEA -SM42/211
PLESSEY-450.002.0551
ELDOR - 2062.0052
T1
SK1
U1 PTC
2x12mH U2
F1 2AT
F2 1A
TS1 BC307
TS2 BC307
TS3 BC327
TS4 BC368
TS5 BU508A
2xBA157
4xBY133
D5 1N4007
D8 1N4001
D9 BA 159
D10 BA157
D15 BY299
D16 BY299
D17 BY299
D20 1N4004
IC1 LM 317 T
MASSA PER TEST SU ALIMENTATORE
GROUND FOR SUPPLY TEST
GAUSSING
NON ISOLATA DA RETE
NOT INSULATED
BY GROUND


6035000172
6035000001/5
66003200
IC170 TDA 3562A
IC4 TDA 2594
IC5 TDA 1670A
IC1 LM 317 T
* D250 D251 D265 SOLO PER SECAM ONLY FOR SECAM
GUADAGNO VERDE GREN GAIN
GUADAGNO BLU BLU GAIN
A1-B1-C1
CORTOCIRCUITARE PER "PAL" APERTI PER "PAL/SECAM"
SHORT CIRCUIT FOR "PAL" OPEN FOR "PAL/SECAM"
* SOLO PER 110V ONLY FOR 110V
* SOLO PER 220V ONLY FOR 220V
CEA -SM42/211
PLESSEY-450.002.051
ELDOR - 2082.0052
FREQ. ORIZZ. HORIZ. FREQ.
FASE ORIZZ. HORIZ. PHASE
AMP V
FREQ. V.
LIN. V.
LARGHEZZA WIDTH
SPOST V. V. SHIFT
CRT
A 51 EAS00 X 01
A 59 EAS00 X 01
A 66 EAS00 X 01
A 66 EAK 50 X 01

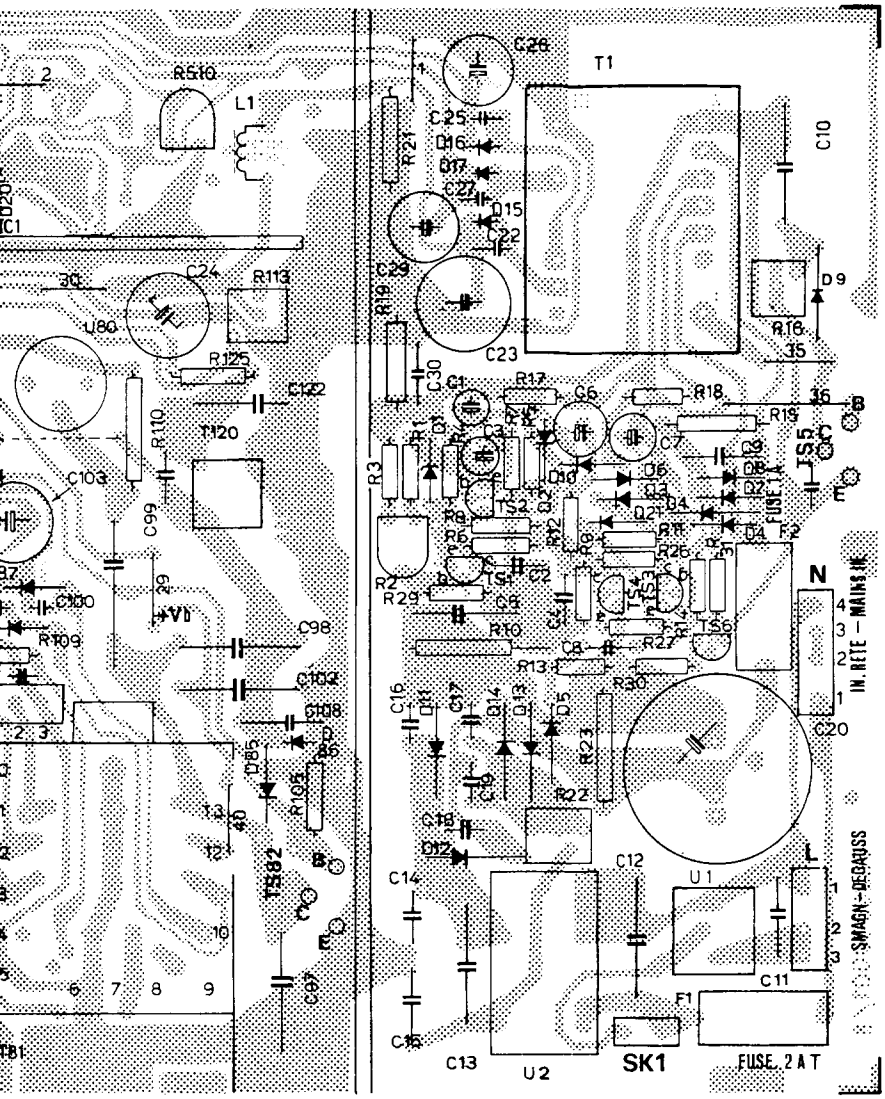
RGB MODULE 66003205

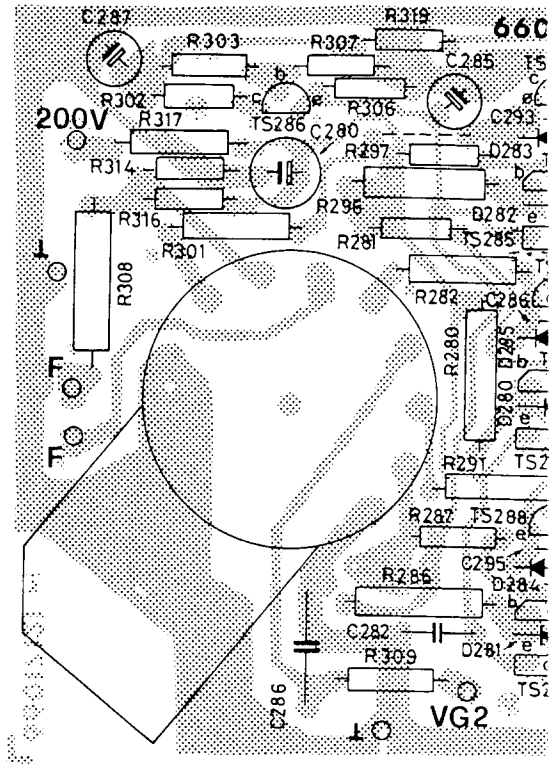


CRT	C 99	C 61	R 124	R 308
A 51 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 59 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAS00 X 01	330 n	2200 µ	560 K	0.82 R
A 66 EAK 50 X 01	240 n	1500 µ	330 K	1 B 5

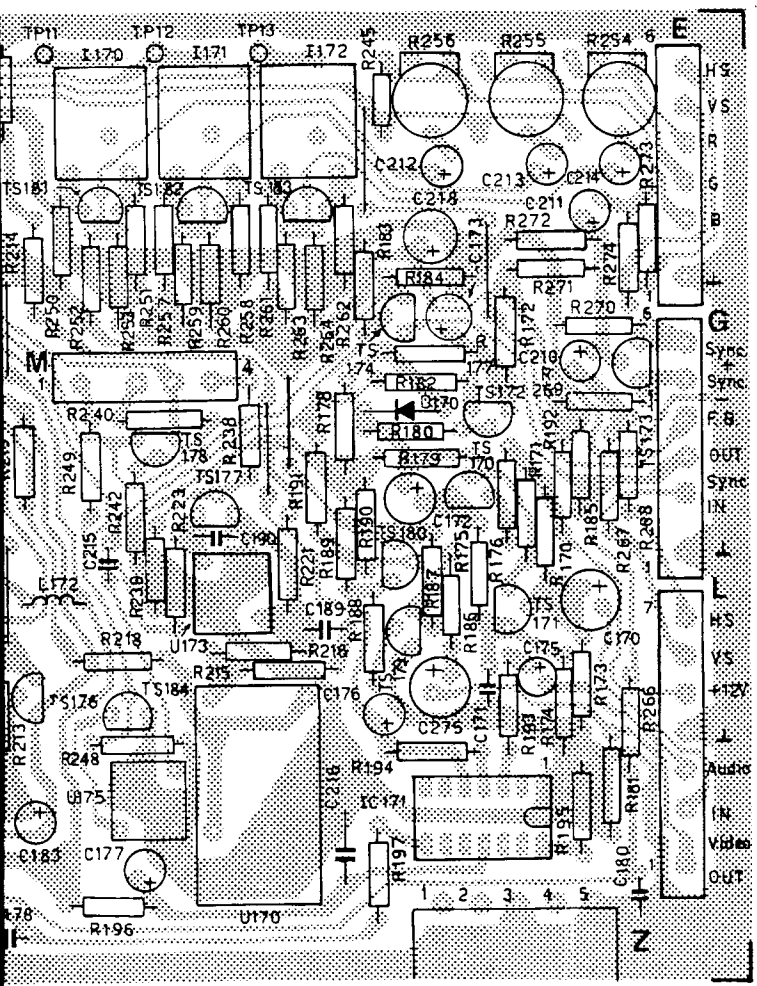


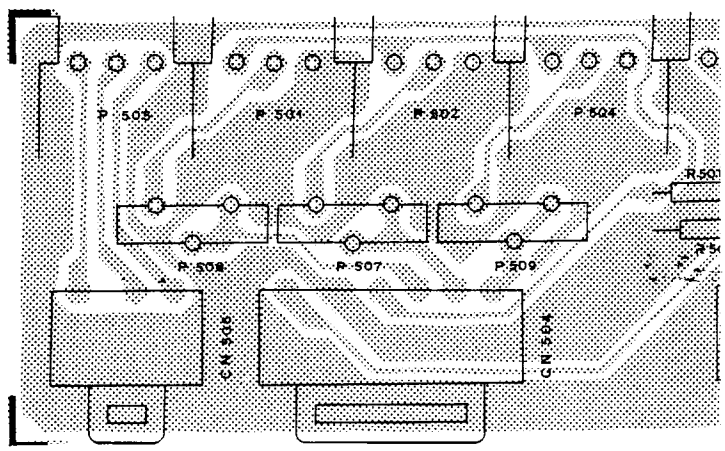
CHROMA MODULE 66003040/5/7



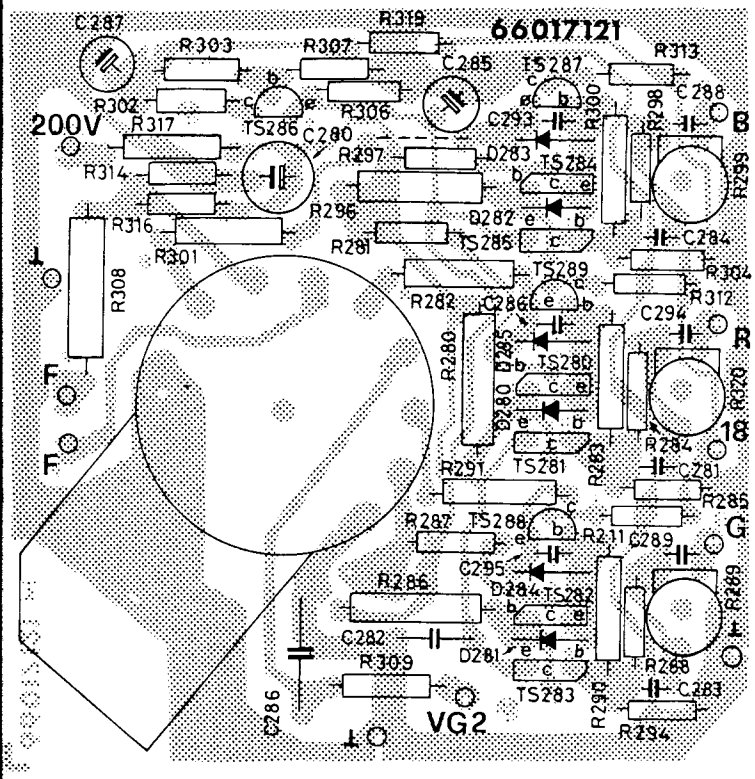


RGB MODULE 66003205

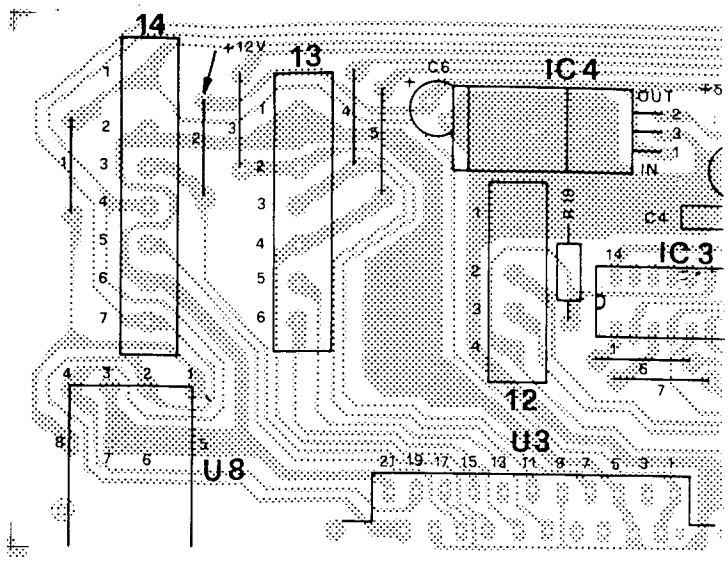




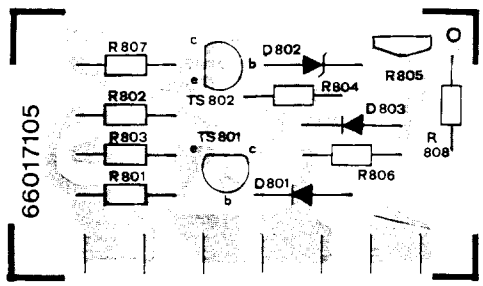
INPUT CONNECTORS + ANALOG (



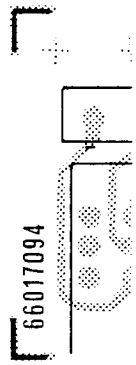
RGB MODULE 66003205

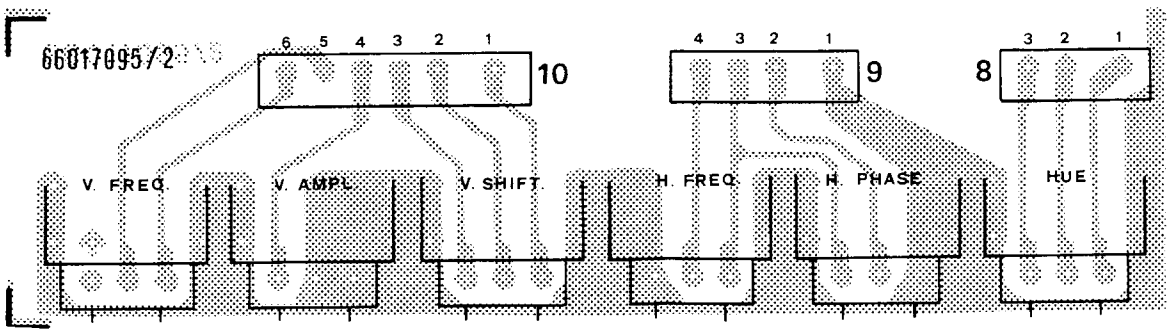


INPUT CON

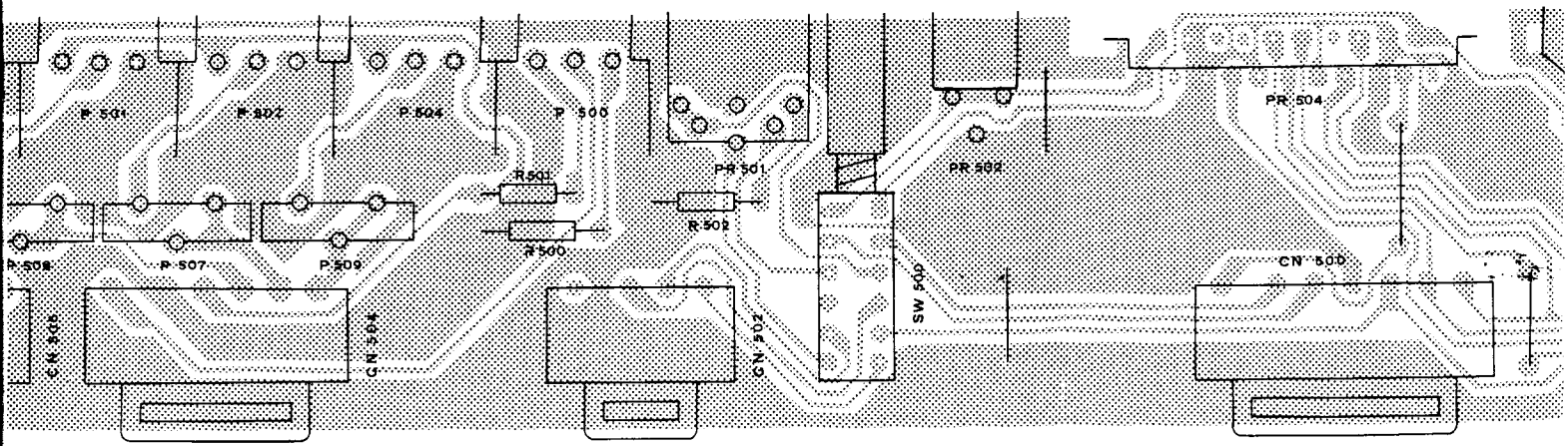


X RAY PROTECTION MODULE 66003384

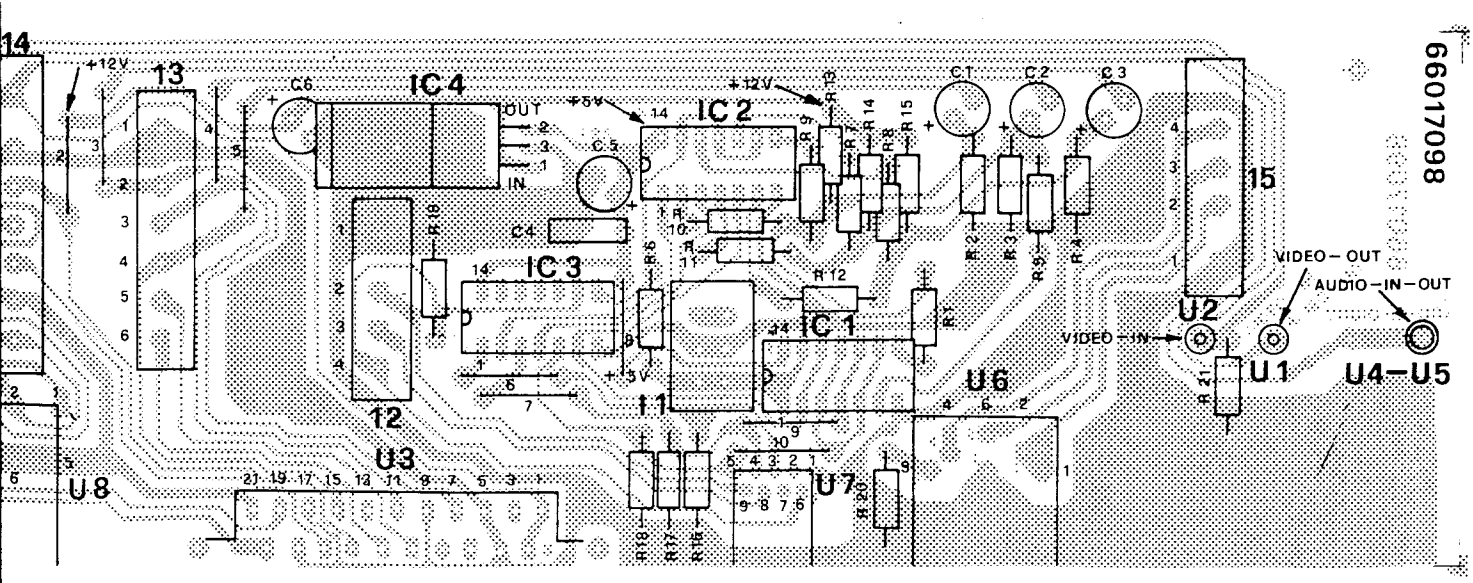




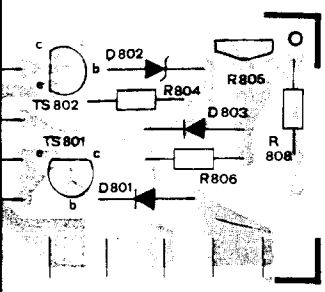
ANALOG CONTROL 660033



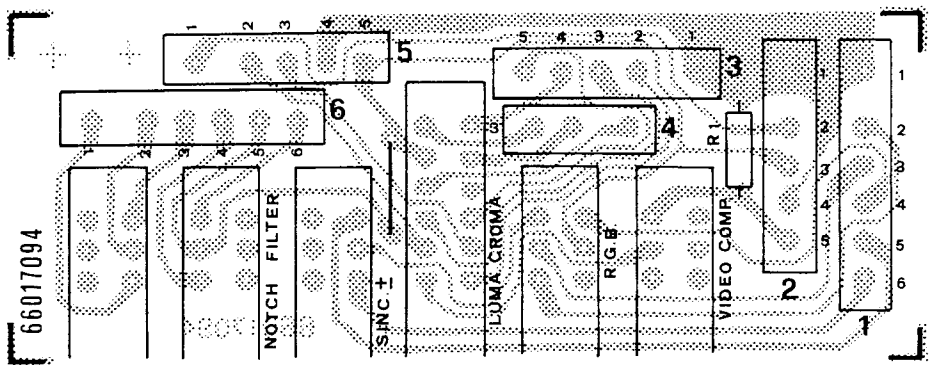
INPUT CONNECTORS + ANALOG CONTROL 66003383



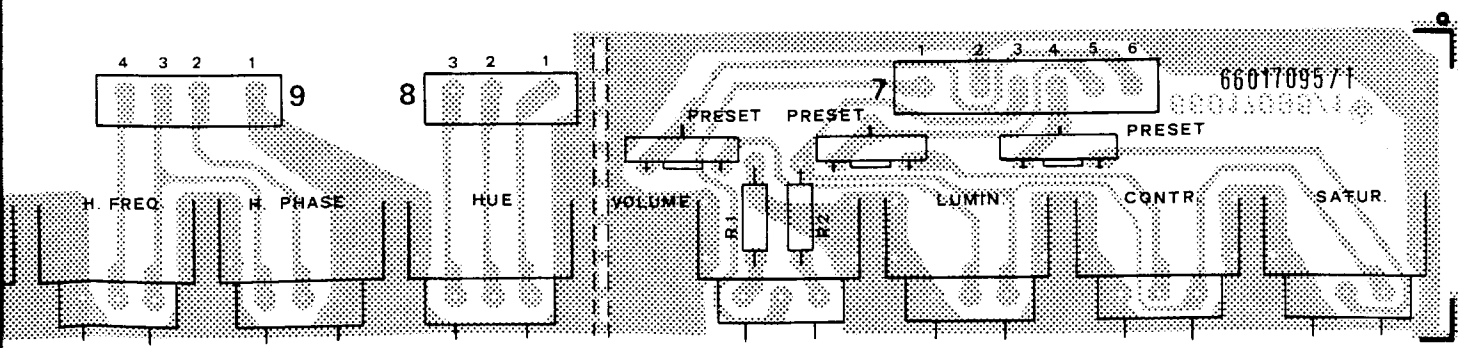
INPUT CONNECTORS + INTENSIFIER 66003367



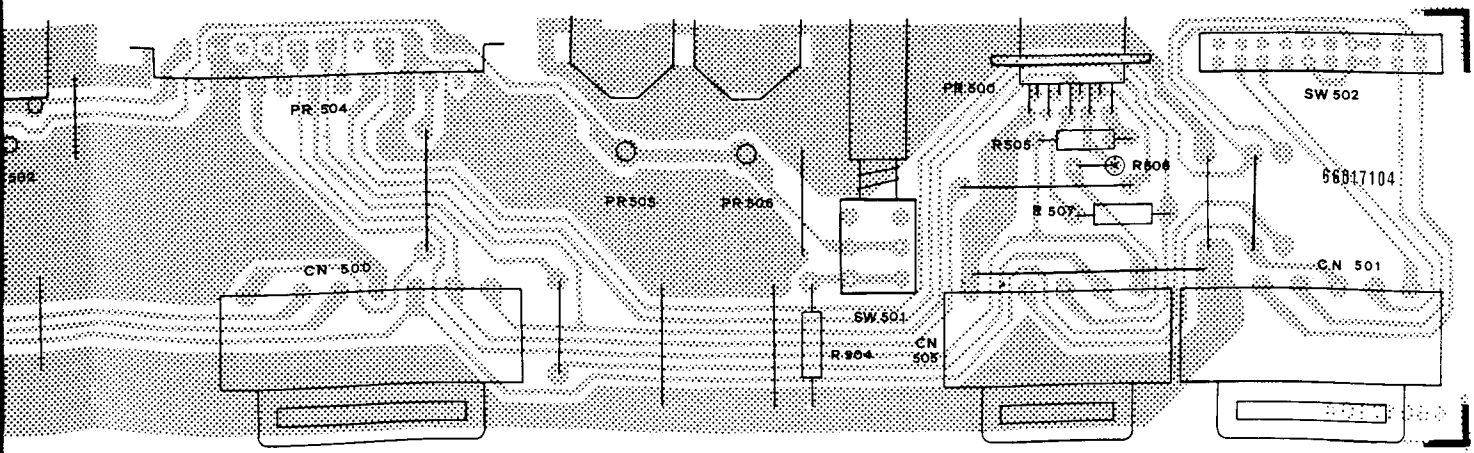
CTION MODULE 66003384



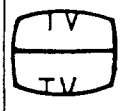
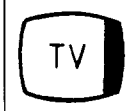
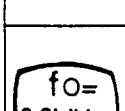
SWITCHING MODULE 66003369

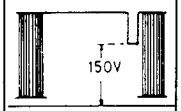
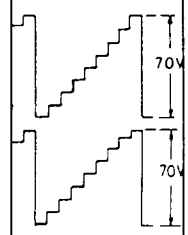


ANALOG CONTROL 66003368



ISTRUZIONI ALLINEAMENTO - *ADJUSTMENT PROCEDURE*

	ALLINEAMENTO *ADJUSTMENT*	SEGNALE *SIGNAL*	OPERAZIONE *CONDITIONS*	P TO MIS IND *Point of measurement*	TARARE *ADJUSTMENT*	VALORI DI TARATURA *CALIBRATION VALUES*	
	110 Tensione di lavoro *Working conditions voltage 110*	MONOSCOPIO *Test Pattern*	220/230 Vr corrente di fascio - 0 *220/230 mains input*	Catodo D15 e massa *Cathode D15 and ground*	R2 R2	150 Vdc 110	
	Frequenza Orizz. *Hor. frequency*	MONOSCOPIO *Test Pattern*	Corto circ. SK4 *Short circuit SK4*	Schermo *Screen*	R91 *R91*	tarare per maggior stabilità della immagine, dopo togliere corto circuito *Adjust for max. stability of image*	
	Frequenza verticale *Vert. Frequency*	MONOSCOPIO *Test. Pattern*		Schermo *Screen*	R58 *R58*	Regolare sino a che il quadro scatta verso l'alto *Adjust so that picture drifts upwards*	
	POSIZIONE ORIZZONTALE *Hor. Position*	MONOSCOPIO *Test. Pattern*		schermo *Screen*	R96 R96		
	110 AMPIEZZA ORIZZ. *Hor. amplitudine*	MONOSCOPIO *Test Pattern*		Schermo *Screen*	R123 *R123*		
	E - O correzz. E - W	MONOSCOPIO *Test Pattern*		Schermo *Screen*	*R120* *R120*		
	AMPIEZZA VERTICALE *Vert. amplitude*	MONOSCOPIO *Test Pattern*		Schermo *Screen*	R56 *R56*		
	LINEARITÀ VERT. *Vert. Linearity*	MONOSCOPIO *Test. Pattern*		Schermo *Screen*	R54 *R54*		
	POSIZIONE VERTICALE *Vert. Position*	MONOSCOPIO *Test Pattern*		Schermo *Screen*	R127 *R127*		
	Oscillatore sottoport. colore *Sub-carrier osc.*	MONOSCOPIO O BARRE COLORE Color Test Pattern	Cortocircuitare IP8-9, IP 5—6 *Short-circuit IP6-7, TP11-10*	Schermo *Screen*	*A1C195 (mod croma)* *C195*	Tarare per migliorare stabilità del colore togliere c.c *Set for max. stabilty and remove short-circuit*	
	AMPIEZZA DEL TEMPO DI TRANSITO *Delay amplitude*	MONOSCOPIO O BARRE COLORE *Color Test Pattern*	GENERATORE DI BARRE PM 5519 PHILIPS POS. "DEM" *test pattern PM 5519 PHILIPS POS. "DEM"*		R233 (mod. croma) R233	Tarare R233 per eliminare L'effetto veneziana sulla terza barra. *Adjust to eliminate venetian blind on third bar.*	

	FASE DEL TEMPO DI TRANSITO *Delay phase*	MONOSCOPIO O BARRE CALORE *Color Test*	GENERATORE DI BARRE PHILIPS PM5519 POS. "DEM" *Test Pattern generator PM5519 POS. "DEM"*		U172 *U172*	Tarare U172 fino ad eliminare l'effetto veneziana nella prima e quarta barra. Ritoccare R233. *Adjust to delete venetian blind on first and fourth bars. Re-ad just R233*	
Vg2	LIVELLO DEL NERO *Black level*	MONOSCOPIO *Test Pattern*	MIN MIN *MIN*	CATODO B del cinescopio *B catholde of c. r. t.*	Pot. G2 su trasf. riga *G2 pot. on line trans*	Tarare per portare la fine dell'impulso verticale a 150 V *Set test line at the end of blanking period to 150V*	
	LIVELLO DEL BIANCO *White level*		MIN 3.3 V pin 61 C 170 in modo che sia visibile tutto il campo nero. *To render black areas just visible.*	CATODO B DEL CINESCOPIO *G cathode*	*R299* *R289*	*70Vpp* *70Vpp*	
4,28MHz	SECAM circuito campana *Gaussian fitter*	SEGNALE SECAM debole *Attenuated SECAM Signal*	A richiesta *If requested*	Schermo *Screen*	U350	Tarare per minimo effetto fiamma Adjust for min. phase	
4,06-4,25MHz SECAM	SECAM bobina rivelatore *Descriminator filter*	GENERATORE SECAM *SECAM test pattern*	Pin 28 di ICI/70 *Pin 28 of ICI70*		Tarare il centro U352 R357 Tarare reciprocamente Sequentially Several times	NEL (R-Y) e (B-Y) al minimo. *Adjust centre Frequency of (R-Y) and (B-Y) for minimus*	

MONITOR NTSC *NTSC MONITORS*

ATTENZIONE: Alimentazione 110 Vac

ATTENTION: Mains 110 Vac

Tutte le altre regolazioni identiche ai modelli PAL (all other functions are to be the same as PAL).

REGOLAZIONE TINTA

Tarare R505 (pre-regolazione) sul modulo croma in modo che il potenziometro frontali effettui una regolazione corretta della tinta

TINT ADJUSTMENT

Adjust R505 pre-set so that adjustment on the front panel covers a correct tint range.